

AD-758 066

**SOME BASIC PROCESSES IN PERSUASION**

**Nathan Maccoby, et al**

**Stanford University**

**Prepared for:**

**Office of Naval Research**

**6 March 1973**

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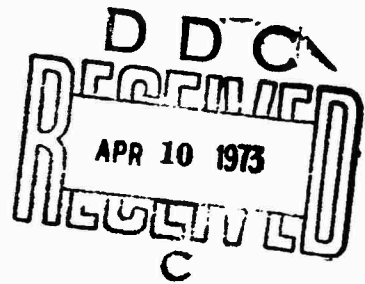
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AD758066

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FINAL REPORT  
March, 1973



Prepared in connection with research under the Office of  
Naval Research, Contract No. N00014-67-A-0112-0032;  
Nathan Maccoby, Principal Investigator.

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## DOCUMENT CONTROL DATA - R &amp; D

Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified

1. ORIGINATING AGENCY (Corporate author) Institute for Communication Research Stanford University Stanford, California 94305		2a. REPORT SECURITY CLASSIFICATION Unclassified	
3. REPORT TITLE Some Basic Processes in Persuasion		2b. GROUP	
4. DESCRIPTIVE NOTES (Type of report and inclusive dates) Final Report 9/1/68 - 12/31/70			
5. AUTHOR(S) (First name, middle initial, last name) Maccoby, N., Roberts, D. F., Paisley, M. B., and Sherrod, D.			
6. REPORT DATE March 6, 1973	7a. TOTAL NO OF PAGES 157 163	7b. NO OF REFS 83	
8a. CONTRACT OR GRANT NO N00014-67-A-0112-0032	9a. ORIGINATOR'S REPORT NUMBER(S) Final		
b. PROJECT NO NR 177-923/8-23-68 Code 452	9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)		
c.			
d.			
10. DISTRIBUTION STATEMENT This document has been approved for public release and sale; its distribution is unlimited.			
11. SUPPLEMENTARY NOTES		12. SPONSORING MILITARY ACTIVITY Office of Naval Research Group Psychology Programs	
13. ABSTRACT Several studies of variables affecting counterarguing behavior and of the relationship between counterarguing behavior and resistance to persuasion are reported. A technique for obtaining receivers' "comments" during message reception was developed. On the basis of an extensive review of the counterarguing literature, a study which manipulated opportunity to counterargue and commitment to a position on an issue was conducted. It was found that neither commitment nor opportunity alone mediated resistance to persuasion, but that a combination of the two did mediate resistance. It was also found that counterarguments produced after message reception appear more likely to be rationalizations of an opinion position adopted earlier, while certain types of counterarguments produced during message reception did mediate resistance. Additional studies found some tentative evidence for a relationship between directionality of lateral-eye-movement and individual differences in the likelihood of resistance to persuasion; that inoculation procedures are efficient when the persuasive message is presented via film; and that if distraction inhibits message reception, then any gain in persuasion due to interference with counterarguing responses is more than offset by message reception loss.			

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## KEY WORDS

## LINK A

## LINK B

## LINK C

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attitude change  
 cerebral dominance  
 cognitive processes  
 commitment  
 counterargument  
 counterarguing behavior  
 cultural truism  
 distraction  
 distraction hypothesis  
 eye-movement  
 inoculation  
 inoculation theory  
 message reception  
 opinion  
 opinion change  
 persuasion  
 reactivity to persuasion  
 reflective lateral eye movement  
 resistance to persuasion  
 source credibility  
 yielding

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## SOME BASIC PROCESSES IN PERSUASION

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### Final Report

The following pages report several studies which look at different aspects of cognitive processes as they occur during persuasion.<sup>1</sup> Particular attention is paid to such processes as they are manifested in counterarguing behavior.

Among the major concerns addressed in these studies was the development of a technique for obtaining receivers' "comments" on a persuasive message as they received the message. Our assumption was that such comments would move us a step closer to receivers' "cognitions" as they processed a persuasive appeal. Procedures for obtaining such "cognitions" and the relationship between cognitions and resistance to persuasion are reported in the first paper included in this report.

Perhaps the most significant finding to emerge from the work reported in the first paper is the indication that we need to make a distinction between motivation to resist a persuasive appeal and motivation to counterargue against a persuasive appeal. That is, by independently manipulating both commitment to a position on an issue and opportunity to counterargue against an attack on that position, we were able to demonstrate that neither commitment alone nor counterarguing alone was sufficient to mediate resistance to the persuasive appeal. Rather, resistance was a function of a combination of the two

treatments.

The work reported in the following pages also provides evidence that a conceptualization of "meaning" will be necessary if we are to fully understand the nature of information processing as it occurs during message reception; that counterarguments generated after message reception (and often after response to opinion scales) are more likely to be rationalizations of an opinion position adopted earlier than indicators of "comments" used during reception which mediated resistance or yielding; that a majority of the comments generated by all receivers during message reception tend to support rather than counter the persuasive appeal, but that when receivers generate their own counters, resistance increases; that direction of lateral eye movement may be an indicator of individual differences in likelihood of resisting persuasive appeals; that the inoculation procedures employed by McGuire (cf. McGuire, 1964) work efficiently when the persuasive message is presented via film (prior research had used only written messages); and that when distraction interferes with message reception, reception loss more than offsets any gain in persuasion attributable to distraction.

The attached reports, then, provide the following:

- A comprehensive review of the research literature relevant to counterarguing behavior and resistance to persuasion;
- Description of a technique for obtaining and coding comments produced by receivers both during and after reception of a persuasive message;

- Description of a study manipulating commitment to a position on an issue and opportunity to counterargue against an attack on that position;
- A tentative model of the counterarguing process and the relationship between counterarguing and resistance to persuasion;
- A pilot study of the relationship between lateral eye-movement and resistance to persuasion;
- A study which attempted to combine the distraction manipulation employed by Festinger and Maccoby (1964) and the inoculation procedure used by McGuire (1964).

Also attached, as Appendix A, is a paper which was presented to the Fourth Attitude Change Conference of the American Marketing Association and which has subsequently been published in the proceedings of that conference. This paper describes some of our early efforts at obtaining receivers' comments during message reception.

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<sup>1</sup> In addition to the various authors of the reports included here, the able assistance of Miss Susan Higley and Dr. Jon Jecker, who were instrumental in carrying out much of this research, should be acknowledged. Thanks are also due Mrs. Hester Berson, Ms. Jan Matthews, and Ms. Carol Streit for their work in preparation of these reports.

INFORMATION PROCESSING AND PERSUASION: COUNTERARGUING BEHAVIOR<sup>1</sup>

Donald F. Roberts and Nathan Maccoby

INTRODUCTION

Most people have experienced situations in which someone has attempted to change their opinion about some event, object, or issue. Moreover, at least on some occasions people who have been the target of a persuasive message have argued back, have attempted, either overtly or covertly, to refute the persuasive appeal directed at them. Indeed, instances of such counterarguing behavior even when there is no possibility of affecting the source of the persuasive message are not uncommon. All of us have probably seen someone, if not ourselves, argue with a televised speech, a newspaper editorial, or a radio commercial, in spite of the obvious fact that "refutations" of the message were unlikely to pass beyond the walls of our own living room. And those of us willing to introspect a bit further can probably recall instances when we have counterargued brilliantly, totally shattering (in the eyes of any reasonable man) the persuasive import of the message directed at us, only later to find ourselves adopting the position we had so ruthlessly annihilated for the very reasons we had so cleverly debunked. In short, regardless of whether our comments are overt or covert, regardless of whether the persuader is present or absent, regardless of whether or not our counterarguments facilitate resistance to the appeal, it seems clear that one characteristic way of dealing with a persuasive message is to engage in counterarguing with it.

Although attitude change researchers have long noted that counterarguing is a common response to persuasive appeals, surprisingly the counterarguing process as such received little research attention until recent years. Even though some of the early research on persuasion --



for example, the primacy vs. recency studies of Lund (1925; also see Rosnow, 1966) and the work on one-sided vs. two-sided messages (e.g., Hovland, et al., 1949; Lumsdaine and Janis, 1953) -- assumed, either implicitly or explicitly, that counterarguing influenced message acceptance, primary concern was with optimal message strategies for achieving attitude change rather than with counterarguing itself. For the most part, counterarguing behavior was assigned the role of an intervening variable, usually appealed to in post hoc discussions of the relationship between a variety of manipulated independent variables (usually presumed to mediate learning) and attitude change.

Even in the early sixties, when the growth of interest in resistance to persuasion began to focus attention on counterarguing per se, conclusions about the role of counterargumentation were based more on inferences than on measurements. That is, studies were designed in which factors presumed to facilitate or inhibit counterarguing were manipulated, but the mediating role of counterarguing was inferred on the basis of attitude change data (e.g., McGuire, 1964; Festinger and Maccoby, 1964).

Only recently has counterargument production acquired the status of a dependent variable in its own right, as several investigators have explored various procedures for making manifest the counterarguments that receivers are presumed to generate when exposed to a persuasive message (e.g., Cook, 1969; Osterhouse and Brock, 1970; Maccoby and Roberts, 1971). One result of this relatively new direction in persuasion research has been to enable more direct examination of the presumed relationship between counterarguing and opinion change and between counterarguing and factors thought to influence counterargument production. Another important

dividend of this attempt to elicit counterarguments in a measurable form has been the opportunity to move a step closer to some of the cognitive strategies which may occur as an individual processes persuasive information.

The following pages present a brief review of research on counterarguing behavior, report some of our own work on the problem of monitoring counterarguments as they occur, and speculate on a possible model which attempts to integrate our own findings with those of earlier studies.

#### RESEARCH ON COUNTERARGUING AND RESISTANCE TO PERSUASION

For the most part, studies which have concentrated on counterarguing behavior are centrally concerned with resistance to persuasion. They can generally be classified under one of three headings. The first two, work on inoculation against persuasion (McGuire, 1964) and on the distraction hypothesis (e.g., Festinger and Maccoby, 1964), have attempted to manipulate counterarguing as an independent and/or intervening variable while maintaining attitude change as the primary, if not sole, dependent variable. The third set of studies, which can be viewed as something of a convergence of the two preceding approaches, has manipulated many of the same independent variables presumed to influence counterarguing behavior, but has also employed counterargument production as a primary dependent variable. That is, conclusions about the counterarguing process are based on measurements of counterargument production.

#### INOCULATION STUDIES

William McGuire's work on inducing resistance to persuasion provides a substantial body of data relevant to counterarguing behavior. His

inoculation theory (McGuire, 1964) stems from a medical analogy that likens a viral attack on an organism's biological system to a persuasive attack on a person's belief system. In the biological case resistance to a massive viral attack may be stimulated either by pre-exposure to a weakened dose of the virus (inoculation) or by augmenting health via adequate rest, vitamin supplements, and so forth (supportive therapy). Similarly, resistance to a massive persuasive attack on the belief system may be stimulated either by inoculation -- prior exposure to a mild version of the attack to stimulate defenses against a later, massive attack, or by supportive therapy -- augmenting of the initially held opinion to bolster that opinion in the hope that the stronger it is the more impervious to attack it will be.

Continuing the analogy, McGuire notes that people who have experienced only supportive therapy and who have been brought up in a "germ-free environment" tend to appear vigorously healthy, but are highly vulnerable when suddenly exposed to massive doses of the disease virus. In like manner, beliefs which have developed in a "germ-free environment," which appear to be vigorously healthy but have never been exposed to any doubt, may well succumb to attack if it occurs. Therefore, he hypothesizes, an inoculation treatment should be more effective than supportive therapy for inducing resistance to persuasion, particularly when the belief to be attacked has existed in a relatively aseptic environment.<sup>2</sup>

The belief analogy to "germ-free environment" McGuire terms "cultural truisms." These are "beliefs that are so widely shared within the person's social milieu that he would not have heard them attacked, and indeed, would doubt that an attack were possible" (McGuire, 1964: 201).

A set of health propositions (e.g., "It's a good idea to brush your teeth after every meal if at all possible;" "Mental illness is not contagious") were found to conform to this conceptualization of truism in that upwards of 75 percent of all respondents checked the most extreme agreement point on a 15 point scale of agreement with the propositions. Such propositions provide the issues attacked and defended in most inoculation studies.

Two assumptions underlie McGuire's prediction that inoculation will be superior to supportive therapy for inducing resistance to persuasion: (1) resistance to attack on a belief is a function of practice at defending that belief (i.e., counterarguing against an attack); (2) practice at defending a belief is a function of motivation to engage in such practice. Cultural truisms are highly vulnerable for the very reason that because they have never been threatened people have never been motivated to practice defending them, hence they don't have available the defenses with which to counter an attack. The relative efficacy of the two pre-attack treatments, then, derives from their differential ability to fulfill the conditions of the two basic assumptions.

Theoretically at least, supportive therapy, which is simply the bolstering and/or augmenting of an existing belief, fares poorly. A supportive treatment consists of giving the believer, prior to any attack, various arguments supporting the belief he already accepts as true. Although such a treatment can provide some material which might be useful in defending against later attack, it neither creates awareness of impending threat to the belief nor does it specifically provide counters which could be used in event of attack. In other words, supportive therapy

neither motivates practice at defending nor provides counterarguments to be practiced.

An inoculation treatment, on the other hand, does meet the two assumptions. Inoculation consists of exposing a person to a mild attack on his belief (prior to a later, massive attack) and, in the same message, presenting counterarguments against the attacking points. Exposure to attacking arguments is conceived as creating a threat which should motivate a person to practice defending; presenting counters against the threatening attack serves to insure that the inoculation dosage is not so strong as to be fatal and simultaneously augments the defensive armory by supplying defensive materials to be practiced.<sup>3</sup>

Experiments testing inoculation theory typically comprise two sessions, the first to administer the various defensive treatments and the second to expose subjects to a massive attack on the belief and to measure success of the attack. Operationally, the supportive treatment consists of presenting subjects with a truism in propositional form, followed by several arguments supporting the proposition, followed by having subjects either read (passive) or write (active) paragraphs supporting the supportive arguments. Clearly such a treatment simply bolsters an existing belief, containing no motivating threat of possible attack, providing no defensive materials with which to counter an attack. In the inoculation or "refutational" treatment, the proposition is followed by two arguments attacking the truism, after which subjects read or write paragraphs refuting the attacking arguments. The fact that attacking arguments exist is assumed to provide the threat necessary to motivate defense preparations, while the reading or writing of paragraphs explicitly refuting

the attacking arguments functions as a practice session which will serve well if and when attack occurs.

During the attack session, anywhere from a few minutes to seven days later, subjects are exposed to a strong attack on the cultural truisms, then respond to opinion measures tapping agreement with the propositions. To the extent that the persuasive message achieves a reduction in acceptance of the propositions, the defensive treatments are inferred to be more or less effective.

Using this general design,<sup>4</sup> McGuire and Papageorgis (1961) found that the inoculation treatment produced more resistance to persuasion than did the supportive treatment, that the supportive treatment did not produce significantly more resistance than was manifested by subjects exposed only to an attack, that reading refutations of attacking arguments produced more resistance than writing them, and that after the defensive session but prior to the attack the supportive treatment led to more strengthening of the belief than did the inoculation treatment -- a "paper tiger" effect. Papageorgis and McGuire (1961) also found that inoculation induced resistance to persuasion when compared to attack-only controls regardless of whether arguments refuted in the defensive session were the same as (refutational-same) or different from (refutational-different) those encountered in the later attack session, although the refutational-same treatment engendered slightly more resistance. In other words, inoculation worked even if the opposition's exact arguments were not anticipated.

In addition to supporting the general hypothesis that inoculation would be superior to a supportive treatment, these studies provide at

least tentative evidence that both motivation and practice at defending play a role in the resistance process. Inoculation's superiority over the supportive treatment, in conjunction with the "paper tiger" effect found for the supportive treatment, indicates that some kind of motivation is a necessary precursor to resistance. Support for the importance of practice at defending is somewhat stronger, deriving from both the superiority of the passive over the active refutational treatment (McGuire and Papageorgis, 1961) and the slight, immediate superiority of the refutational-same over the refutational-different treatment (Papageorgis and McGuire, 1961). Assuming the threat produced by all refutational treatments was the same, then the difference between the passive and active conditions and between the refutational-same and refutational-different conditions would seem to lie in the amount of immediately relevant counters made available -- hence practiceable -- to subjects. Both the passive and the refutational-same conditions appear to provide more such defensive materials.

Further studies provide additional evidence on the relative roles of motivation and practice in the resistance process. For example, McGuire and Papageorgis (1962) found that increasing threat via forewarning prior to the defensive session enhanced the resistance conferred by both supportive and refutational treatments, with enhancement significantly greater for the supportive defense. Conversely, McGuire (1964) cites a study by Anderson showing that prior reassurance (i.e., decreased threat) lowered resistance conferred by both defensive treatments, with the decrease slightly greater for the supportive treatment. Thus, increment and decrement in threat, hence motivation, led respectively to

increment and decrement in resistance, and the supportive treatment, which contained no motivational component of its own, was the more affected. Still another study (McGuire, 1964) independently manipulated threat and reassurance by mentioning either two or four attacks on the truism (low and high threat, respectively) and by refuting either zero or two of the attack arguments (low or high reassurance, respectively). Results showed more resistance in the high threat condition, again demonstrating the importance of motivation.

Turning to the role of practice, the latter study also found more resistance in the high reassurance condition which, because it was operationalized in terms of the number of arguments refuted in the defensive session, indicates that as available defense materials increase, so too does resistance. Similarly, assuming that there are at least some defense materials inherent in a supportive treatment, McGuire's (1961b) demonstration that the combination of a supportive and a refutational treatment induces greater resistance than either treatment alone also implies that ability to resist increases with the amount of available defense materials. McGuire (1961a) also found a passive inoculation treatment was superior to an active treatment using refutational-same arguments while the reverse was true using refutational-different arguments, and that combining passive and active participation during the defense session enhanced the refutational-same treatment more than did the refutational-different. In each case the superior treatment was the one in which subjects can be assumed to have encountered and/or generated more immediately relevant materials with which to counter an attack.

In addition to several other tests of inoculation theory reported by



McGuire (e.g., 1962) a similar research program conducted by Tannenbaum and his associates (Tannenbaum, 1967) provides further information about the nature of the defense process.<sup>5</sup> For example, Macaulay (1965) found that when, during the defense session, the ostensible source of an impending attack on a belief denied making the attack and took an explicit position supporting the pre-attack belief, resistance was increased. Similarly, Tannenbaum (1967) reports that pre-attack derogation of the source of an impending attack on a belief led to increased resistance. In the Macaulay case, it can be argued that the denial served as a warning or threat, motivating defensive preparation, while the statement of a pro-belief position provided at least some material which could be used defensively. The source derogation treatment employed by Tannenbaum can also be viewed as containing both a motivational component and usable defense materials with which to counter the attack. Given studies that have shown it is difficult, if not impossible, to separate the source of a message from the message itself -- that linking a source to a statement influences both the attitudinal acceptability (Lorge, 1936) and the meaning (Asch, 1948) of that statement -- pre-attack source derogation should provide threat enough to motivate practice defending against that source and material with which to conduct that defense, regardless of the issue on which the source takes a position. Indeed, under some conditions it may be less difficult to counter a persuasive message by defending against its source than against its arguments.

A number of studies, then, indicate that manipulations designed to motivate people to prepare to defend their beliefs and to provide defense materials (or conditions amenable to acquisition of defense materials) with which to conduct a defense are capable of increasing resistance to

persuasion. Given these results it demands no great leap of logic to infer that subjects used the acquired counters to defend against attack. The fly in the ointment, of course, is the word "infer"; there are no direct measures of counterarguing behavior. Moreover, the mechanisms McGuire assumes to underlie induced resistance need further clarification. For example, the threat inherent in the inoculation procedure may well motivate some direct disposition to resist in addition to or rather than a disposition to practice defenses. Though the two processes are difficult to separate, there is a difference.

#### DISTRACTION STUDIES

In grossly oversimplified terms, the distraction hypothesis as first proposed by Festinger and Maccoby (1964) states that distracting a receiver from counterarguing with a persuasive message will result in a lowering of resistance to the persuasive impact of that message. Regretfully, several researchers appear to have interpreted the hypothesis in such simplified terms, ignoring several of the assumptions underlying it.

Briefly, Festinger and Maccoby (1964) assumed that to the extent a receiver comprehends the argument of a persuasive message, and to the extent that he is relatively involved with or concerned with the issue dealt with by the message, then yielding to or resisting a persuasive appeal is a function of the supportive and/or counter responses (overt or covert counterarguments of agreeing comments) generated by the receiver as he processes the message. They reasoned that if these assumptions are true, then distracting a receiver from counterarguing

against a counterattitudinal appeal should lower his resistance to that appeal.<sup>6</sup>

The seminal distraction study (Festinger and Maccoby, 1964) tested this hypothesis by exposing fraternity men and independents to a persuasive film, the sound track of which advocated abolition of college fraternities. For half the subjects in each sample, the film visuals illustrated and reinforced points in the message (non-distracted group); remaining subjects (distracted group) saw visuals dealing with the trials and tribulations of a modernistic painter -- a totally unrelated, humorous, silent film selected to create just enough distraction to interfere with counterarguing by fraternity men and pro-arguing (agreeing) by independents, but not enough distraction to interfere with learning of the message.

At schools where the fraternity issue was salient, results supported the distraction hypothesis.<sup>7</sup> Distracted fraternity men were less resistant to the persuasive message and less likely to derogate the speaker than were non-distracted fraternity men, who were not at all affected by the message when compared to a control group. Conversely, although the difference did not reach statistical significance, results for non-fraternity men were in the opposite direction, distracted independents agreeing less with the message than did non-distracted independents. In other words, distraction of full attention from an anti-fraternity message caused pro-fraternity men to be less resistant to the message and anti-fraternity men to be less accepting, evidence that distraction interfered with concurrent counterarguing and/or agreeing responses.

A number of subsequent studies, using different issues and distraction procedures, have further explored the distraction hypothesis,

producing somewhat varied results. On the supporting side of the ledger, Freedman and Sears (1965) and Dorris (1967) found distracted subjects to be marginally (but not significantly) more susceptible to a persuasive message than were non-distracted subjects. Rosenblatt (1966) and Kiesler and Mathog (1968) demonstrated increased yielding under distracting conditions, although results of the latter study occurred only with a highly credible source. Rule and Rehill (1970) found an interaction between distraction and self-esteem, distraction increasing yielding among high self-esteem subjects but having no effect among low self-esteem subjects. And Osterhouse and Brock (1970) report clear-cut evidence that distraction reduces resistance to persuasion -- results which are greatly strengthened in that this study measured counterargument production and showed less counterarguing among distracted subjects. On the other hand, Breitrose (1966) and Gardner (1966) found no difference in opinion change between distracted and non-distracted subjects. And directly counter to the distraction hypothesis, both Haaland and Venkatesan (1968) and Vohs and Garrett (1968) found that non-distracted subjects manifested more attitude change than did distracted subjects.

Several explanations have been offered for this rather mixed bag of results (Osterhouse and Brock, 1970). The most convincing deal with the degree to which various studies meet the assumptions underlying the distraction hypothesis.

For example, McGuire (1966) noted that a learning theory approach to persuasion would predict non-distracted subjects to be more susceptible to persuasion since they should be better able to learn the substance of the persuasive message. Although this position somewhat misses

the point of the distraction hypothesis, it does serve to explain some of the studies which failed to find greater susceptibility among distracted subjects. That is, the distraction manipulation was conceived by Festinger and Maccoby (1964) as a procedure for interfering with subjects' cognitive responses to a persuasive message, but not with reception of that message. Indeed, if distraction is too strong or the message does not contain enough redundancy to guarantee learning of the message, then the consequent persuasion gain due to interference with counterarguing could be more than offset by message reception loss. In this context, it is notable that studies which failed to support the hypothesis and which included a learning measure (e.g., Breitrose, 1965; Gardner, 1966; Haaland and Venkatesan, 1968) found distracted subjects less able than non-distracted subjects to reproduce message content. Although Vohs and Garrett (1968) did not measure learning, earlier work by Vohs (1964) using a similar distraction technique also showed that distraction led to lower learning scores. On the other hand, studies supporting the distraction hypothesis found no differences in subjects' ability to reproduce message content. Thus, to the extent that message reception (i.e., learning) is not hindered, the distraction hypothesis tends to be supported.

In a similar vein, Zimbardo and his students (Zimbardo et al., 1974) noted that for many studies supporting the distraction hypothesis, instructions to subjects could be interpreted as emphasizing attention to the persuasive message as the primary task, while for many studies failing to support the hypothesis instructions tended to point to the distraction task as primary. They independently manipulated distraction

(high and low) and task orientation (message orientation vs. distractor orientation), and found that distracted subjects who attended primarily to the persuasive message were more susceptible to persuasion than were control subjects or distracted subjects who attended primarily to the distractor. Although no learning measure was included, the results fit nicely with the preceding points. That is, it is reasonable to surmise that the distraction task, when attention was focused on the persuasive message, was just strong enough to interfere with concurrent counterarguing but not with learning. Focusing attention on the distraction task itself, however, could well have interfered both with counterarguing and with message reception, hence with learning, hence with attitude change. And although Zimbardo et al. (1970) cast some doubt on the counterarguing mechanism with their finding that, on the basis of self reports, distracted-attention-to-distractor subjects gave fewer counterarguments than did either control subjects or distracted-attention-to-message subjects, this too would be expected if they had heard/learned less of the message.

Turning to the other assumption underlying the distraction-acceptance hypothesis, Osterhouse and Brock (1970) point out that unless the issue addressed by the persuasive message is involving enough to motivate counterarguing under normal circumstances (issues which may also be expected to elicit increased attention), then the hypothesized mediating role of counterarguing cannot be expected to operate, hence distraction cannot create interference. Of the studies failing to support the distraction hypothesis, both Breitrose (1965) and Gardner (1966) used issues which were highly unlikely to motivate counterarguing, and some question

can also be raised about the motivating impact of the Vohs and Garrett (1968) issue.<sup>8</sup>

Another hypothesis offered to explain Festinger and Maccoby's (1964) results holds that yielding on the part of distracted subjects may have derived from a kind of positive affective response due to the use of a humorous film as the distractor (McGuire, 1966; Vohs and Garrett, 1968; Kiesler and Mathog, 1968). This explanation, however, ignores the lack of yielding among the distracted, non-fraternity men in the original study. Moreover, subsequent experiments which demonstrated the distraction effect have used a wide enough variety of distractors to discount this possibility.<sup>9</sup>

Finally, an effort justification hypothesis derived from dissonance theory has also been offered to account for results supporting distraction findings. Dissonance theory would argue that expending effort to attend to a counterattitudinal message creates dissonance which can be reduced by realigning one's attitudes to concur with the message (Festinger, 1957). For example, Zimbardo (1965) had subjects read a counterattitudinal message under varying degrees of delayed auditory feedback (i.e., effort) and found that the greater the delay the greater the attitude change. However, this explanation also overlooks Festinger and Maccoby's results with distracted non-fraternity men. In addition, Kiesler and Mathog (1968) directly tested the effort justification explanation by manipulating high and low levels of distraction and of source credibility. With this design, the distraction hypothesis predicts that under high distraction there should be less resistance with a high credibility source than with a low credibility source (i.e., failure to counter a strong message

should lead to more change than failure to counter a weak message), while the effort justification hypothesis predicts just the opposite (i.e., effort expended to hear a message from a low credibility source should create more dissonance, hence more change, than effort expended to hear a message from a high credibility source). Supporting the distraction hypothesis, the study found more change under high distraction when the source was highly credible. Indeed, one could attribute Zimbardo's (1965) results to distraction, arguing that delayed auditory feedback creates distraction which makes counterarguing difficult.

It appears, then, that when the assumptions underlying the distraction hypothesis are considered -- when the persuasive message addresses an issue which can be expected to elicit covert (or overt) supportive or counter responses under normal conditions, and when message reception, hence comprehension, is unimpaired -- then interfering with such counter (supportive) comments increases (decreases) yielding. From this we can infer that concurrent counterarguing or agreeing by receivers mediates either resistance or acceptance.

As with the inoculation studies, however, most distraction evidence concerning the counterarguing process is inferential. Only two studies report attempts to get more directly at counterarguing behavior: Zimbardo and his students (1970) collected self reports of counterarguing and Osterhouse and Brock (1970) included a direct measure of such responses. The latter study will receive more attention in the following section.

#### COUNTERARGUING STUDIES

The unifying characteristic of the studies gathered in this section is that all obtained some direct measure of counterarguing against a



persuasive message.<sup>10</sup> Generally such research manipulates various independent variables which are hypothesized to mediate different amounts and/or kinds of counterargumentation. Then, in addition to collecting opinion scores, the researcher intervenes at some point in the experimental procedure by asking subjects to make overt their cognitions (counters, thoughts, comments, etc.) about the message. Conclusions about counterarguing behavior are based on between condition comparisons of counterarguing scores per se and/or correlations between counterarguing scores and opinion scores.

The wide variety of procedures employed, however, make comparisons among these studies difficult. They differ in how counterarguments are defined, how they are scored, and at what point in the experimental procedure they are collected. Differences also occur in whether the persuasive communication is written or vocal and in the many independent variables used to influence variations in counterarguing behavior. Since counterargument production is our primary concern, we cover these studies in slightly more detail.

Some of the more straightforward evidence that receivers' cognitive responses mediate opinion change derives from tests of Greenwald's cognitive response formulation of persuasion (Greenwald, 1968). This model regards persuasive situations as complex stimuli that evoke cognitive reactions (e.g., agreeing comments; counterarguments) among receivers which range along a positive-negative dimension. By virtue of their rehearsal in the persuasion situation, such responses are assumed to become conditioned to the opinion topic specified in the communication, leading to a shift in attitude toward that topic in the direction (positive

or negative) represented by the new response content. That is, Greenwald holds that the important mediator of opinion change is not the substance of the persuasive message, but the directionality of the substance of receivers' cognitive responses to the message.<sup>11</sup> Thus agreeing responses should mediate acquiescence and disagreeing responses should mediate resistance.

Greenwald (1968) obtained cognitive response data by asking receivers to "collect their thoughts" about a persuasive message immediately following message reception but prior to completing opinion scales. Listed thoughts were judged to agree or disagree with the advocated position, were assigned weights (from one to three units) indicating intensity of agreement or disagreement, and were classed into one of three categories: externally originated (e.g., derived directly from points in the message), recipient modified (e.g., modifications such as illustrations, qualifications, or reactions to points in the message), or recipient generated (e.g., ideas dealing with the issue but not traceable to specific points in the message). A "directional content index" was computed by subtracting weights for opposing thoughts from weights for supporting thoughts and dividing by the sum of weights for all thoughts. To the extent that index scores were negative, subjects' comments can be conceived as countering the persuasive message.

Across several experiments conducted to test the cognitive response formulation, directional content scores were correlated with scores on opinion items. Subjects who favored the advocated position generated more agreeing remarks; subjects who resisted gave more disagreeing remarks. Moreover, the largest proportion of listed thoughts fell into the recipient

generated category, and only those scores correlated significantly with post test opinion scores. In other words, the important "cognitive responses" were those generated by the subjects themselves as opposed to reactions elicited in direct response to points in the message. It is also noteworthy that Greenwald (1968) found more positive directional content index scores and more favorable opinion scores when subjects heard a two-sided message as opposed to a one-sided message. It appears that by recognizing and refuting arguments opposed to the advocated position, the two-sided message undercut receivers' motivation and/or opportunity to counterargue, hence lowered their resistance to persuasion.<sup>12</sup>

Using a similar technique for eliciting and scoring cognitive responses, Greenwald and Mayer (n.d.) found that directionality of cognitive responses was a function of source credibility. Subjects responded to a set of arguments supporting increased China-U.S. relations, with each argument attributed to a different source, representing one of three levels of credibility. The mean cognitive response score for low credibility sources was negative (indicating disagreement and/or counterarguing), while the score for high credibility sources was positive (with moderate credibility sources eliciting a mean score of zero!). Moreover, ignoring source, and categorizing the persuasive arguments in terms of plausibility, less plausible arguments engendered more negative scores and more resistance. Again, there was a significant correlation between cognitive response scores and opinion scores.

Several other studies have examined counterargument production as a function of source credibility. Cook (1969), in one of the few experiments to attempt to obtain counterarguments during message reception

(defining message loosely), manipulated high and low levels of credibility and of "reception." The reception manipulation consisted of using as the persuasive message a list containing either one or eight arguments attacking a cultural truism (McGuire, 1964), with a space adjacent to each argument in which subjects could write their "comments."<sup>13</sup> Comments were coded for counterarguments (a comment in any way disagreeing with a persuasive argument was classified as a counter) and scores were compared with post message opinion scores.

In addition to the frequently reported finding that a high credibility source led to greater message acceptance, Cook's results revealed that high perceived source credibility led to few counterarguments but that low perceived credibility did not increase counterargument production. The study also provided evidence that counterarguing functioned as a causal intervening variable in that an analysis of covariance using number of counterarguments as the covariate and opinion scores as the dependent variable reduced significant between-source-group F values to less than one. In other words, with the counterarguing effect removed there was no between group difference in belief change due to source -- substantial evidence for a causal role attributable to counterarguing.

Miller and Baron (1968) also hypothesized an inverse relationship between source credibility and counterarguing. They reasoned that the personality orientation used as a distractor in earlier studies (e.g., Freedman and Sears, 1965) served not so much to distract subjects from counterarguing as to increase the saliency and impact of source credibility cues which, in turn, might affect counterarguing. Crossing high

and low levels of source credibility with either a personality or a message orientation, post message measures included asking subjects to list "examples or ideas" they would use to argue with the speaker, in addition to the usual opinion scales and measures of source credibility. Unfortunately, the credibility manipulation was unsuccessful, both sources being perceived to have little credibility. Important to our present concern, however, subjects who were instructed to concentrate on the speaker's personality produced more counterarguments than their content-oriented counterparts, the difference approaching (but not reaching) significance. These results provide tentative evidence that when source credibility was low, instructing subjects to concentrate on the source rather than on the content of his message tended to increase counterargument production.

Several studies have employed anticipatory counterargument production as their major dependent variable. That is, subjects were forewarned of an impending persuasive message and were asked to generate comments about the topic prior to message reception. Baron and Miller (1969) used introductory instructions to forewarn subjects, to manipulate expectations of high or low source credibility, and to orient subjects toward either the content of the message or the personality of the speaker (a distraction manipulation). Subjects were then asked to anticipate agreement or disagreement with the message and (in one minute!) to list "objections, arguments, or examples" they would use to support their own position -- all prior to hearing any message. Counterargument scores were based on the number of words in each subject's counter comments,<sup>14</sup> and were further classified as being directed either at the source or at the content of the message.

Combining source and content counters, Baron and Miller found that among personality oriented subjects those anticipating a low credibility source produced more words of counterargument than did those anticipating a high credibility source, while among content oriented subjects there was no effect of source credibility. However, when only "content counters" were analyzed the pattern of results revealed a marginally significant cross-over interaction, with personality oriented subjects producing more counters when expecting a low credibility source, but content oriented subjects producing more when expecting a high credibility source.

While there are some difficulties with the "anticipatory" design (which will be touched on later), this study, in conjunction with those of Greenwald and Mayer (n.d.), Cook (1969) and Miller and Baron (1968), provides fairly substantial evidence that counterargument production and source credibility are inversely related. Whether this effect is always due to a reduction in counterarguing when the source is of high credibility as Cook (1969) found or to an increase with a low credibility source, or both, awaits further testing.

Brock (1967) also obtained receivers' anticipatory counterarguments in a fully crossed three factor design manipulating forewarning of intent to persuade (as opposed to forewarning of a non-persuasive message), three levels of communication-recipient discrepancy, and presence or absence of a counterargument priming factor (an "example" of a counterargument). University students were informed they would read a message advocating a small, moderate, or large increase in university tuition prepared by either the university Faculty Council with the intent of

persuading the student body to accept the increase or by graduate students in journalism to fulfill a course requirement. Half the subjects in each of these conditions were also presented an example of a counterargument. Following these manipulations subjects were given ten minutes to list their thoughts and ideas about the tuition increase, after which they read the message and responded to various opinion scales. Each subject's counterarguing score was simply the number of listed comments meeting comparatively stringent criteria: a counterargument had to be a declarative statement directed against the tuition increase and had to mention a specific unfavorable or undesirable consequence that was not simply a restatement or paraphrase of the fact of tuition increase.

Results supported, either marginally or strongly, each of Brock's three primary predictions. There was a marginally significant effect of forewarning, counterargument production increasing with perceived intent to persuade. There was a large effect for priming with subjects receiving the example producing more counters than those who did not. And finally, as communication-recipient discrepancy increased so too did counterargument production, the differences between discrepancy groups being large and significant. Further analyses revealed that post-message agreement with the advocated position and perceived convincingness of the arguments decreased as discrepancy increased, and that correlations between counterarguments and attitude scores were negative at all treatment levels. For the discrepancy variable, then, attitude scores reflected what would be expected on the basis of counterarguing scores. However, it was also found that while the priming manipulation increased counterarguing it did not reduce message acceptance.

Thus, while under some conditions counterargument production appeared to influence resistance, under other conditions it did not.

The "anticipatory" designs used by Brock (1967) and Baron and Miller (1969) pose some problems of interpretation. Although receivers' pre-message comments can be defined as arguments for or against a particular issue, it is difficult to conceive of them as counterarguments in the strict sense of the term. They are not responses to points or issues raised by a persuasive message; they do not "counter" anything other than some anticipated position on an issue. While pre-message comments may provide a good indication of a receiver's defensive armory, or even of his pre-message position on an issue, if we are willing to assume that aspects of the total persuasive stimulus can and do influence both how a receiver processes persuasive information and his final opinion position, then counters generated before an attack are not necessarily isomorphic with those employed during an attack. To use a rather brutal analogy, the fact that a military commander has at his disposal an armory ranging from small arms to H-bombs need not mean that he will use all (or even any) of them when attacked. To a large extent his defense -- which arms he employs, if any -- depends on the nature of the attack. In short, while studies which obtain pre-exposure comments can tell us something of the extent and nature of the counters available to receivers, and something of the conditions under which they are likely to think about those counters prior to attack, they do not speak directly to the question of if, when, and how available counterarguments are employed during message reception.

Only one study has obtained counterarguments against a standard persuasive message during reception.<sup>15</sup> Janis and Terwilliger (1962),



whose primary interest was in the relationship between fear arousal and attitude change, hypothesized that a high threat message would lead to high fear arousal which would lead to increased defensiveness and resistance. During exposure to either a high or low fear arousing message (dealing with smoking and cancer), subjects verbalized any thoughts which occurred to them as they read. The tape-recorded verbalizations were classed as either affective or evaluative reactions, the former including a) expressions of worry, affective disturbance, emotional tension or b) references to unpleasant aspects of cancer, and the latter including a) major criticisms such as rejection statements about specific arguments, b) minor criticisms such as unfavorable comments about style or objectivity, c) major favorable comments, d) minor favorable comments, or e) paraphrases of arguments in the message. Scores represented the number of paragraphs in the message to which a subject gave at least one spontaneous comment in the category.

Subjects who received the low threat communication changed more in the advocated direction and subjects in the high threat condition gave many more affective responses indicating a higher degree of disturbance. More important to the present topic, fear arousal also affected the nature of the evaluative comments but not the overall amount. That is, there was no difference between the two message groups in the number of evaluative reactions verbalized, but high threat subjects produced more major criticisms (explicit rejections) of the message, and fewer minor favorable comments and paraphrases of arguments. There were no between group differences for major favorable comments or minor criticisms. Fear arousal, then, seems to have motivated resistance manifested

not only in opinion scores but also in rejection statements -- statements which include many of the characteristics of counterarguments. Moreover, lack of fear-created resistance was related to more paraphrases of arguments, a response viewed by Janis and Terwilliger as indicative of agreement with message arguments.

Finally, as noted earlier, Osterhouse and Brock's (1970) distraction experiments asked subjects to list any "thoughts and ideas about the possible effects of raising tuition" after exposing them to a message advocating an increase. Counterarguments were scored using Brock's (1967) criteria.

The first study, varied only levels of distraction (high, moderate or none) and found a marginally significant effect on yielding, increased distraction leading to increased communication acceptance (with a significant linear trend) and an inverse relationship between distraction and counterarguing scores. As predicted by the distraction hypothesis, non-distracted subjects produced more counters than either distraction group. Moreover, within conditions, the correlations between communication acceptance and counterarguing scores were negative, the overall within condition correlation was highly significant, and removing the effect of counterarguing from opinion scores by covariance reduced F ratios for communication acceptance.

The second study manipulated distraction (four levels), communication threat (high or low perception that a tuition increase would occur) and perceived influence (high or low likelihood that subjects' responses might influence implementation of a tuition increase). Again increased distraction mediated increases in communication acceptance

and decreases in counterarguing (with both trends significantly linear), and again a covariance analysis removing the effect of counterarguing scores reduced the effect of distraction on communication acceptance to less than statistical significance. While there was no main effect on counterarguing scores due to communication threat nor for perceived influence, there was a threat by influence interaction. High-perceived-influence subjects counterargued more than low-perceived-influence subjects under conditions of high communication threat, but no such difference occurred under conditions of mild threat.

The two studies provide strong support for the distraction hypothesis, particularly for the presumed mediational role of counterarguing. And while the second experiment seems to be somewhat at odds with Janis and Terwilliger's (1962) findings in that there was no main effect for threat, it is possible that subjects in the earlier study perceived themselves to have control over their own smoking behavior and were thus comparable to Osterhouse and Brock's high influence subjects. It is also possible that Osterhouse and Brock's (1970) manipulation was threatening but not fear-arousing.<sup>16</sup> Finally, the latter study adds still another possibility, perceived influence, to the list of variables which, at least under some conditions, appear to mediate counterarguing behavior.

Unlike inoculation and distraction studies, then, research classified as counterarguing studies provides direct evidence of an inverse relationship between counterarguing behavior and resistance to persuasive appeals. Moreover, given the covariance analyses performed by Cook (1969) and Osterhouse and Brock (1970), the negative correlations between

counterarguing and message acceptance found in many of the studies, the general tendency for independent variables which produced significant F's for opinion scores to also produce significant F's for counterarguing scores, and the wide variety of procedures and definitions employed to obtain these results, it is difficult not to impute a mediating role to counterargumentation.

In addition, the counterarguing studies reviewed above have added substantially to the list of variables which appear to mediate counterarguing behavior. These include source credibility, controvertedness of issue, plausibility of persuasive arguments, threat, fear-arousal, perceived influence, message structure, and communication-recipient discrepancy. In other words, not surprisingly many of the same variables which have frequently been shown to mediate persuasion are, when approached from a different perspective, also mediators of counterargumentation.

#### SOME UNANSWERED QUESTIONS

Research conducted thus far has raised more questions than it has provided answers. We might ask, for example, if counterarguments produced after message reception (e.g., Greenwald, 1968; Miller and Baron, 1968; Osterhouse and Brock, 1970) are adequate indicators of counterarguing as it occurs during message reception. At least under some conditions they may well be rationalizations of post-message positions, resistance mediating counterargumentation rather than the reverse. While Osterhouse and Brock (1970) cogently argue against the latter possibility, there have been no comparisons between counters produced during reception and counters produced after reception.

Similarly, given the different definitions of counterarguments employed across the wide variety of experimental designs reviewed above, there are a number of points to be raised about the nature of the counterarguing process itself. For example, does the content or focus of a counterargument make a difference? Baron and Miller's (1969) results comparing source counters and content counters and Greenwald's (1968) distinction between "recipient generated," "recipient modified," and "externally originated" counters indicate a need for more attention to the substance of the counters themselves, not to mention to the various conditions under which the focus of counterarguments might vary. We can also ask what constitutes a counter. Need it be the strictly limited declarative statement required by Brock (1967), or can it simply be any comment indicating disagreement with the message? And what is the best measure of counterargument production? Is it the number of counterarguments, however defined, produced? Or the intensity of counterarguments? Or the ratio of counterarguments to agreeing responses? Or the number of words contained in all counterarguments? Or some combination of these?

And clearly further specification of the relationship between counterarguing and resistance and between various independent variables and counterargument production is needed. For example, at least one study reported by Tannenbaum (1967) found that a supportive treatment increased resistance to persuasion. Hence, while there was no direct measure of counterarguing, these results at least imply that counterargumentation may not be a necessary condition for resistance. Similarly, the interactions found by several investigators (e.g., Kiesler,

and Mathog, 1968; Rule and Rehill, 1970; Baron and Miller, 1969), and Brock's (1967) demonstration that a priming manipulation increases counterarguing but not resistance, all point to the conclusion that there are conditions under which counterargumentation is not sufficient to mediate resistance.

## FURTHER EXPLORATIONS IN COUNTERARGUING

### THE RESEARCH QUESTIONS

Our own research on counterargumentation has been aimed at beginning to address some of the questions raised in the preceding pages. A primary interest has been in the nature of counterarguing as it occurs during message reception, in whether counterarguments produced during reception resemble those produced after reception and whether they relate to resistance in the same way. This, of course, demanded development of a procedure for obtaining receiver responses during communication exposure. In addition, we were interested in exploring further whether qualitative differences among counters (e.g., whether they are directed at a specific point in the message, or at the source, or whatever) locate differential resistance, and in examining the relationship between countering responses and agreeing responses. Finally we wanted to experiment with several techniques for scoring counterarguments.

We have also been interested in further specification of some of the conditions assumed to mediate counterarguing behavior and resistance to persuasion. In the most general terms, these are the same factors that underlie most human behavior. That is, counterargumentation is at least a function of availability of defensive materials (as demonstrated by inoculation research), of opportunity to use these materials

(as shown by distraction studies), and of motivation to use these materials (as indicated by studies in all three of the research traditions reviewed earlier). There remain, however, a number of questions about the operation of these conditions which have not been investigated.

For example, although limiting opportunity to counterargue has been at the heart of all tests of the distraction hypothesis, no study has manipulated an increase in receivers' opportunity to generate counterarguments. Hence, while there is evidence that inhibition of counterarguing reduces resistance to persuasion, we have no idea whether facilitation of counterarguing increases resistance. We can also ask whether increasing receivers' opportunity to counterargue affects the nature of their responses to a message in terms of the kinds of defensive materials they bring to bear.

We were also interested in addressing several questions about the motivation variable. Frequently, prior research has confounded manipulations of motivation with other variables, particularly counterargument availability, making it difficult to draw precise inferences about the role of motivation in the counterarguing/resistance process. For example, most studies of counterargumentation have employed relatively controversial issues in order to insure that counterarguing occurs. Indeed, Osterhouse and Brock (1970) argue that a necessary condition for the distraction effect is the use of a "controverted" issue -- one advocating "action having negative consequences for the recipient" or contradicting "a strongly held opinion in an area having important implications for the individual." Both the description and the rationale hold for counterarguing studies as well as distraction studies. The

rationale, of course, is that such issues are likely to incur counterarguing on the part of receivers, and that some counterargumentation is necessary if the researcher is to make comparisons between various levels of independent variables. Hence, participants in most counterarguing studies can be assumed to have been at least moderately motivated to counterargue by virtue of the nature of the persuasive message alone.<sup>17</sup>

The prevalence of such controverted issues in counterarguing research has several implications. First, most experimental manipulations of motivation to counterargue have proceeded from a baseline which is probably well above zero (or even low) motivation. Second, because controverted issues are not only motivating but also those about which recipients are most likely to have an ample supply of defensive materials, we cannot be certain about the independent roles of counterargument availability versus motivation. One can argue that as the supply of counterarguments increases, so too might the likelihood of using them, independent of any motivation to resist a persuasive appeal.<sup>18</sup> And finally, the use of controverted issues makes it difficult to determine whether there is any need for a distinction between motivation to counterargue and motivation to resist.

Both distraction studies and counterarguing studies assume that resistance is a function of counterargumentation, hence they conceive of manipulations as affecting motivation to engage in counterarguing. A possibility which has not been investigated, however, is that motivation to resist may be independent of motivation to counterargue. Conceivably a person could be motivated to yield to or resist a persuasive appeal, regardless of whether or not he is motivated to counterargue.



Conversely, he could be motivated to counterargue but not to resist. Or manipulations of motivation could affect both behaviors (if, indeed, they can be separated). These possibilities recall our earlier questions about whether counterarguing is necessary or sufficient for resistance.

What seemed called for, then, was the use of a counterattitudinal appeal which was not, in and of itself, highly motivating with regard to counterarguing and/or resistance. The use of an issue on which people are willing to take either a positive or negative stand, but about which they do not feel deeply, should enable manipulation of motivation to defend or to resist that is relatively independent of any motivation inherent in the issue *per se*. Moreover, to the extent that the issue is not terribly esoteric, receivers can be expected to have a moderate number of counterarguments available should they choose to defend against attack, but not so many that the sheer number of available counters could account for any experimental effect.

Given these questions, we needed to design a study which manipulated an increase in subjects' opportunity to engage in counterarguing and an increase in motivation to counter and/or resist which was independent of that inherent in the persuasive issue, and which enabled collection of subjects' comments (agreeing or countering remarks) both during and after message reception.

## EXPERIMENTAL PROCEDURES

### Overview

The resulting experiment employed a 2 x 2 x 2 factorial design varying commitment to a position on an issue (our operationalization

of motivation), temporal opportunity to counterargue, and two modes of "storage" (memory vs. written) of whatever comments subjects produced. The purpose of the latter manipulation was to obtain counterarguments produced both during and after reception. The experimental session was represented as a study of what people think about when listening to newscasts, and included a pre-message questionnaire, presentation of the persuasive message, and a post-message questionnaire. Depending on experimental treatments, written comments about the message were obtained either during and after or only after reception, and opinion scores were obtained either before and after or only after message reception. This procedure enabled analysis of both opinion post scores and change scores and comparisons of counters obtained during and after reception, both within and across subjects.

#### Introductory Procedure

Subjects, 163 male and female junior college students randomly assigned to experimental conditions, met with experimenters (Es) in groups of from 5 to 12 persons. They were told that the study was designed to find out what people think about when listening to news broadcasts, that they would hear a recording of a "news commentary," and that following the recording they would be asked questions about the "broadcast," but that they would not be tested on what they learned. Our interest in counterarguing was not mentioned, nor was there any indication beyond the use of the word "commentary" that the message would attempt to persuade.

The tape recorded message was introduced as having been produced by graduate students at an eastern school of communication. Pilot studies showed this source to have moderate credibility, a desirable

condition in order to avoid source influences on counterargument production (Cook, 1969). The message lasted 8 1/2 minutes and advocated abolition of all "editorial" and "persuasive" content from the news media. Pilot testing showed most people to disagree with the position advocated, but not to be strongly involved in the issue (i.e., the issue, in and of itself, did not seem to be highly motivating). It also appeared to be an issue about which people were capable of producing a reasonable number of counterarguments when asked.

#### Pre-message Questionnaire and Commitment Manipulation

Following introductory instructions, subjects completed a short questionnaire containing various demographic questions and six opinion statements. The opinion items dealt with various aspects of U. S. print and broadcast journalism; subjects were asked to indicate amount of agreement with each statement on fifteen point scales ranging from strongly agree to strongly disagree.

Commitment was manipulated by presenting half the subjects with the same opinion statement that served as the post message opinion measure for all subjects -- a statement summarizing the conclusion of the persuasive message. We assumed that having subjects commit themselves to a position on the issue immediately prior to the message by means of a questionnaire which they knew would be available to the researchers, would serve to motivate them to defend their position more than if they had not taken a pre-message position. The key item, the first of the six opinion statements, read:

Persuasive attempts, such as editorials, columns, and news commentary, are dangerous and misleading and should be abolished from our press system.

Non-committed subjects responded to an item dealing with journalistic coverage of state and local politics. The remaining five statements were identical for all subjects and served as control items.

#### Opportunity and Storage Manipulations

Opportunity to counterargue was manipulated by varying time available to subjects to generate and rehearse comments as they listened to the message. What we have termed "storage condition," was varied by means of a note-taking vs. no-note-taking manipulation.

Subjects were told that our interest was in what people think about while listening to news broadcasts, and that they should pay close attention to their own thoughts about the message because they would be asked about these reactions. Half the subjects from each commitment group were further told that the recording would be stopped for a few seconds at various points in the broadcast in order to give them time to "collect their thoughts." This group (Stop group) heard the recording with a 20 second pause after each major point in the message, for a total of eleven pauses. Remaining subjects heard the message under normal conditions, the tape running continuously from beginning to end (Continuous group). This procedure constituted our manipulation of normal versus high opportunity to counterargue.

Finally, half of the subjects in each of the preceding groups were provided with blank scratch paper under the guise that since they were going to be asked questions about their reactions to the broadcast they might want to make notes on their thoughts as they listened (Write group). Remaining subjects were instructed to make "mental notes" on their reactions, retaining as many thoughts as possible

(Think group). This manipulation was introduced not because of an interest in the effect of "storage" or rehearsal possibilities implied by the write vs. think conditions, but because it provided a means for obtaining comments during reception (via the notes) from half the subjects, as well as an independent set of responses obtained after reception, thus allowing comparisons between the two.

#### Message Presentation

Following instructions, Es played the tape recording either with or without pauses and with or without note-taking. Since commitment was manipulated by means of individually read questionnaires, pre-tested and non-pre-tested subjects could be combined during reception phases of the experiment. Thus, simultaneous running of four reception groups by four different Es (two males and two females) covered all experimental conditions. The complete set of four reception conditions was repeated four times over four consecutive hours, each E serving once in each experimental condition.

#### Post-message Questionnaire

At the conclusion of the tape recording, Write subjects were asked to place their "notes" under their chairs and to refrain from referring to them. Subjects then completed the post-message questionnaire.

The questionnaire included the six opinion statements and associated fifteen point scales of agreement/disagreement which appeared on the pre-message questionnaire, with the exception that all subjects received the statement advocating abolition of persuasive materials from the media -- the opinion dependent variable. Following the opinion items, subjects were asked to list whatever thoughts they had about

the message on two, lined, 8 1/2 x 11 inch sheets of paper. Instructions for eliciting these responses were as follows:

. . . please spend the next few minutes listing all thoughts you have about the message you have just heard. These thoughts may consist of statements either favorable or unfavorable to either side of the issue, of your own personal values on the issue, of the information presented in the message, of your thoughts about that information, or any other thoughts you have, even though they may seem unrelated to the issue.

Subjects were given as much time as needed to complete their responses.

## RESULTS

### Coding Procedures

Three judgments about each comment were made: 1) directionality -- classification of the comment as supportive of, counter to, or irrelevant to the advocated position; 2) intensity -- strength of the comment regardless of directionality (i.e., strongly, moderately, or slightly counter or supportive); 3) category -- qualitative classification of focus of the comment (e.g., aimed at source, a specific point, etc.).

Category definitions were derived from the preceding literature review and from analyses of both pilot test data and forty, randomly selected, experimental protocols. Six content categories were defined on the basis of both face validity and the appearance of comments exemplifying each in the preliminary sample of protocols. Brief definitions of the final categories are as follows:<sup>19</sup>

- 1) Conclusion: specific agreement or disagreement with conclusion of the message.

- 2) Source/Communication: comments aimed at communicator's personality, biases, etc., or at "quality" of communication.<sup>20</sup>
- 3) Point: agreement or disagreement with specific point made in message.
- 4) Subject Generated: agreement or disagreement with subject of message, but related to content not specifically in message (e.g., "reasons why" not found in message).<sup>21</sup>
- 5) Issue: comments about interest value of message.
- 6) Irrelevant: comments not related to the topic.

Three coders independently coded all comments obtained from all subjects, including both notes produced during message reception and "thoughts" listed after reception. Comments were judged to be supportive, counter or irrelevant, assigned a value of zero if irrelevant or a value ranging from -3 (strongly counter) to +3 (strongly supportive) if directional, and placed in the appropriate content category. By this procedure we obtained scores for each single content category and for a "Total" category including all but irrelevant comments, and we computed five different "counterarguing scores", including separate counts of the number of supportive and counter comments produced, a "directional index" combining the two, (number supportive minus number counter), an "intensity score" (algebraic sum of intensity judgements), and a "weighted" intensity score (intensity score divided by number of comments).

#### Intercoder Reliability

Intercoder reliability was assessed in two ways.<sup>22</sup> First, Pearson correlation coefficients,  $r$ , for all possible pairings of scores assigned

each subject by each of the three coders were computed for Total intensity scores, Total number supportive comments, and Total number counter comments (using comments produced after reception). Obtained coefficients ranged from .86 to .90, all significant beyond  $p < .001$  with  $N=163$ .

Second, the Kendall Coefficient of Concordance:  $W$ , was computed for each content category and for all categories combined, using both number of comments and intensity scores. If we assume that the score assigned by each coder to each subject represents that subject's rank among all subjects scored by that coder, then  $W$ , which measures the relationship among more than two sets of rankings, provides an estimate of whether the three coders scored subjects' comments similarly. Obtained coefficients ranged from .45 to .94, all significant by chi-square beyond  $p < .001$ . It should also be noted that coefficients less than .80 were obtained only in the Conclusion, Issue, and Irrelevant categories.<sup>23</sup> None of these categories played a significant role in the following analyses.

On the basis of the foregoing, reliability of coding procedures was judged acceptable. Final counterarguing scores were based on the mean of the scores assigned to each subject by each of the three coders.

#### Total Comments Generated

In order to provide comparison standards, the mean number of comments produced by all subjects, disregarding experimental conditions, was computed for both notes produced during reception (during-comments) and thoughts listed after reception (after-comments). Table 1 summarizes means and appropriate category proportions for the two sets of comments. Since the various content categories do not represent similar levels of



TABLE 1  
A. Mean Number and Proportion of Total Comments Produced by all Subjects (N=163)

Content category	After message reception						
	Number total comments	Proportion total comments	Number supportive comments	Proportion total comments	Proportion supportive comments	Number counter comments	Proportion total comments
Total	6.86	1.00	3.00	.44	1.00	3.86	.56
Conclusion	.15	.02	.04	.01	.01	.11	.02
Point	2.32	.34	1.71	.25	.57	.61	.09
Source/communication	1.10	.16	.27	.04	.09	.83	.12
Subject generated	3.23	.47	.96	.14	.32	2.27	.33
Issue	.05	.01	.02	.00	.01	.03	.00
							1.00
							.03
							.16
							.21
							.59
							.01

B. Mean Number and Proportion of Total Comments Produced by all Subjects (N=79)

Content category	During message reception						
	Number total comments	Proportion total comments	Number supportive comments	Proportion total comments	Proportion supportive comments	Number counter comments	Proportion total comments
Total	7.68	1.00	4.81	.63	1.00	2.87	.37
Conclusion	.28	.04	.16	.02	.03	.12	.01
Point	4.76	.62	3.98	.52	.83	.78	.10
Source/communication	.82	.11	.27	.04	.06	.55	.07
Subject generated	1.81	.23	.38	.05	.08	1.43	.19
Issue	.02	.00	.02	.00	.00	.00	.00
							1.00
							.04
							.27
							.19
							.50
							.00

generality, statistical comparisons among categories of comments produced either during or after reception were inappropriate. Due to large variances, within content categories tests of the proportion of during-comments vs. the proportion of after-comments did not reach statistical significance. However, the patterns revealed in Table 1 are instructive.

First, the larger proportion of comments produced after reception countered the position advocated (56% to 44%) while comments produced during reception favored the advocated position (63% to 37%). Second, the Point and Subject Generated categories accounted for over 80% of all comments, both during and after, while the Conclusion and Issue categories, between them, never account for more than 4% of total comments (further analyses of these last two categories will not be reported). Third, Point comments tend to be supportive while Subject Generated and Source/Communication comments tend to be counter.

Turning to the effect of experimental manipulations on overall production of comments, the mean number of all comments (supportive + counter) produced by subjects in each of the experimental groups are summarized in the first rows of Tables 2 and 4. (This row also includes the number of subjects participating in each experimental group). As indicated by the overall means in Table 2, the various experimental manipulations did not mediate differences in the total number of after-comments. For comments produced during reception, however (Table 4), there was a clear effect for opportunity, with subjects in the Stop conditions producing many more comments ( $F=26.55$ ;  $df=1,75$ ;  $p < .001$ ), and an interaction which approached significance ( $p < .10$ ) due to pre-tested subjects producing more comments than post-tested subjects in

the continuous condition but not in the high opportunity condition. These differences attest to the success of the opportunity manipulation and, to some extent, of the commitment manipulation. Moreover, given that manipulations of independent variables mediated differences in total production of during-comments but not after-comments, the results serve to support our earlier contention that post-message measurements of counterargumentation may not characterize counterarguing during reception.

### Counterarguing Effects

Because an initial interest was to compare a variety of possible measures of counterargument production, within each content category we computed the five different "counterarguing scores" mentioned earlier, for the Point, Source/Communication, Subject Generated, and Total categories, the latter representing the sum of the preceding three plus those few comments which fell into the Issue and Conclusion categories. Tables 2 and 4 present mean counterarguing scores on each measure within each category for subjects in each treatment group for after-comments and during-comments, respectively. Tables 3 and 5 summarize significant effects revealed by analyses of variance. Since the various counterarguing scores were highly correlated and produced similar results, we will attempt to simplify discussion by concentrating on only a few measures.

Tables 2,  
3, 4, 5

As Tables 2 and 3 show, analyses of after-comments consistently revealed an effect of opportunity on counterarguing scores across all content categories, an effect for storage condition within the Total and Point categories, and several interactions which are probably trivial

TABLE 2

Mean Counterarguing Scores by Experimental Conditions  
for Comments Produced After Message Reception

Experimental condition  Counterarguing score	Pre-post				Post only			
	Continuous		Stop		Continuous		Stop	
	Think	Write	Think	Write	Think	Write	Think	Write
Overall number of comments produced	7.11 (N=22)	6.93 (N=20)	6.75 (N=19)	6.00 (N=19)	6.82 (N=22)	6.43 (N=20)	7.86 (N=21)	6.85 (N=20)
Total								
Directional index	.23	.67	-3.00	-.42	-1.51	.30	-1.98	-1.18
N supportive	3.67	3.80	1.88	2.79	2.65	3.37	2.94	2.83
N counter	3.44	3.13	4.88	3.21	4.17	3.07	4.92	4.02
Intensity	-.20	.83	-6.09	-1.21	-2.41	.72	-4.43	-2.77
Weighted intensity	-.04	-.05	-1.04	-.17	-.40	.05	-.70	-.35
Point								
Directional index	1.08	1.55	.16	1.60	1.03	1.87	.57	1.00
N supportive	1.79	2.00	1.37	1.84	1.48	2.10	1.44	1.70
N counter	.71	.45	1.21	.25	.45	.23	.87	.70
Intensity	1.92	2.63	-.12	2.67	2.06	3.32	.87	1.30
Weighted intensity	.50	.62	-.37	.83	.78	.87	.24	.65
Source/communication								
Directional index	-.05	-.25	-.58	-.72	-1.11	-.50	-.92	-.33
N supportive	.53	.35	.09	.25	.29	.25	.32	.08
N counter	.58	.60	.67	.96	1.39	.75	1.24	.42
Intensity	-.18	-.43	-1.04	-1.12	-1.67	-.67	-1.68	-.60
Weighted intensity	-.13	-.13	-.60	-.60	-.37	-.20	-.44	-.38
Subject generated								
Directional index	-.83	-.67	-2.49	-1.35	-1.23	-.92	-1.57	-1.60
N supportive	1.23	1.35	.40	.60	.88	1.02	1.08	1.02
N counter	2.06	2.02	2.89	1.95	2.11	1.93	2.65	2.62
Intensity	-1.91	-1.45	-4.82	-2.72	-2.52	-1.60	-3.41	-2.92
Weighted intensity	-.51	-.63	-1.37	-.58	-.76	-.59	-1.00	-.69

TABLE 3

Summary of Experimental Effects for Comments Produced After Reception

Dependent measures	A	B	C	Experimental Conditions		BxC	AxBxC
				AxB	AxC		
Overall number							
Total							
Directional index	S>C <sup>b</sup>	T>W <sup>b</sup>					
N supportive	S>C <sup>a</sup>						
N counter	S>C <sup>b</sup>	T>W <sup>b</sup>					
Intensity	S>C <sup>c</sup>	T>W <sup>b</sup>					
Weighted intensity	S>C <sup>b</sup>	T>W <sup>b</sup>					
Point							
Directional index	S>C <sup>a</sup>	T>W <sup>c</sup>					
N supportive							STP>STX>CTP>
N counter	S>C <sup>c</sup>	T>W <sup>c</sup>				TP>TX>WX>WP <sup>a</sup>	SWX>CWP=CTX>
Intensity	S>C <sup>b</sup>	T>W <sup>b</sup>					STP>CWX
Weighted intensity	S>C <sup>a</sup>	T>W <sup>b</sup>		ST>CT>SW>CW <sup>a</sup>			
Source/communication							
Directional index						TX>WP>WX>TP <sup>a</sup>	
N supportive	S>C <sup>a</sup>						
N counter						TX>WP>TP>WX <sup>a</sup>	
Intensity						TX>WP>WX>TP <sup>a</sup>	
Weighted intensity	S>C <sup>b</sup>						
Subject generated							
Directional index	S>C <sup>b</sup>						
N supportive					SP>CX>SX>CP <sup>b</sup>		
N counter	S>C <sup>a</sup>						
Intensity	S>C <sup>b</sup>						
Weighted intensity							

Note.--A = opportunity (C = continuous; S = stop); B = storage (T = think; W = write); C = commitment (P = pre-post; X = post only).

In order to facilitate comparison, directional signs within the table are oriented to indicate either most negative (most counter) or least positive (least supportive) mean scores. Blanks indicate no experimental effect. For interactions, signs indicate only direction of means, not significant differences.

<sup>a</sup> = p<.10.

<sup>b</sup> = p<.05

<sup>c</sup> = p<.01.

**TABLE 4**  
**Mean Counterarguing Scores of Experimental Conditions for**  
**Comments Produced During Message Reception**

Experimental condition  Counterarguing score	Pre-post		Post-only	
	Continuous	Stop	Continuous	Stop
Overall number of comments produced	6.70 (N=20)	9.39 (N=19)	4.57 (N=20)	10.17 (N=20)
Total				
Directional index	2.83	2.12	1.53	1.30
N supportive	4.77	5.75	3.05	5.73
N counter	1.93	3.63	1.52	4.43
Intensity	2.45	1.04	1.48	.27
Weighted intensity	.28	.09	.12	.05
Point				
Directional index	3.22	4.09	2.17	3.38
N supportive	3.83	4.58	2.67	4.87
N counter	.62	.49	.50	1.48
Intensity	3.48	4.35	2.62	4.08
Weighted intensity	.75	.65	.38	.64
Source/communication				
Directional index	-.07	-.39	-.20	-.45
N supportive	.42	.61	.07	.02
N counter	.48	1.00	.27	.47
Intensity	-.20	-.37	-.30	-.83
Weighted intensity	-.11	-.07	-.08	-.39
Subject generated				
Directional index	-.47	-1.67	-.50	-1.60
N supportive	.28	.40	.15	.68
N counter	.75	2.07	.65	2.28
Intensity	-.98	-2.96	-.83	-2.75
Weighted intensity	-.52	-.65	-.34	-.55

Note.--Contains only subjects serving in Write conditions (N=79).

TABLE 5

Summary of Experimental Effects for Comments Produced During Reception

Dependent measures	Experimental Conditions		
	A	B	AxB
Overall number	S>C <sup>c</sup>		SX>SP>CP>CX <sup>a</sup>
Total			
Directional index			
N supportive	S<C <sup>b</sup>		
N counter	S>C <sup>c</sup>		
Intensity			
Weighted intensity			
Point			
Directional index			
N supportive	S<C <sup>a</sup>		
N counter	S>C <sup>a</sup>	P<X <sup>a</sup>	CP=SP=CX>SX <sup>b</sup>
Intensity			
Weighted intensity			
Source/communication			
Directional index			
N supportive		P<X <sup>b</sup>	
N counter			
Intensity			
Weighted intensity			
Subject generated			
Directional index	S>C <sup>b</sup>		
N supportive	S<C <sup>b</sup>		
N counter	S>C <sup>c</sup>		
Intensity	S>C <sup>b</sup>		
Weighted intensity			

Note.--A = opportunity (C = continuous; S = stop); B = commitment (P = pre-post; X = post only).

In order to facilitate comparison, directional signs within the table are oriented to indicate either most negative (most counter) or least positive (least supportive) mean scores. Blanks indicate no experimental effect. For interactions, signs indicate only direction of means, not significant differences.

<sup>a</sup> = p<.10.

<sup>b</sup> = p<.05.

<sup>c</sup> = p<.01.

since the patterns of means were not repeated across measures or categories.

The effect for storage condition is perhaps best explained as the result of experimental artifact. Think subjects, who produced the more negative (or less positive) scores, were listing comments for the first time while Write subjects were performing the task a second time. The fact that Write subjects, who took notes during reception, were asked to enumerate their comments a second time probably attenuated responding, perhaps because they tired of the task, or perhaps because they summarized several earlier responses into a few later responses. This explanation is borne out by the slightly lower overall mean number of after-comments produced by Write subjects.

More interesting is the effect for opportunity. Subjects having high opportunity to comment consistently produced more counter (and/or less supportive) scores. Across the twenty analyses conducted, the expected opportunity effect was statistically significant nine times ( $p < .05$  or beyond), approached significance five times ( $p < .10$ ), and manifested means in the predicted direction the remaining six times. Figure 1, based on directional index scores for Total comments, graphically presents the typical pattern of results.

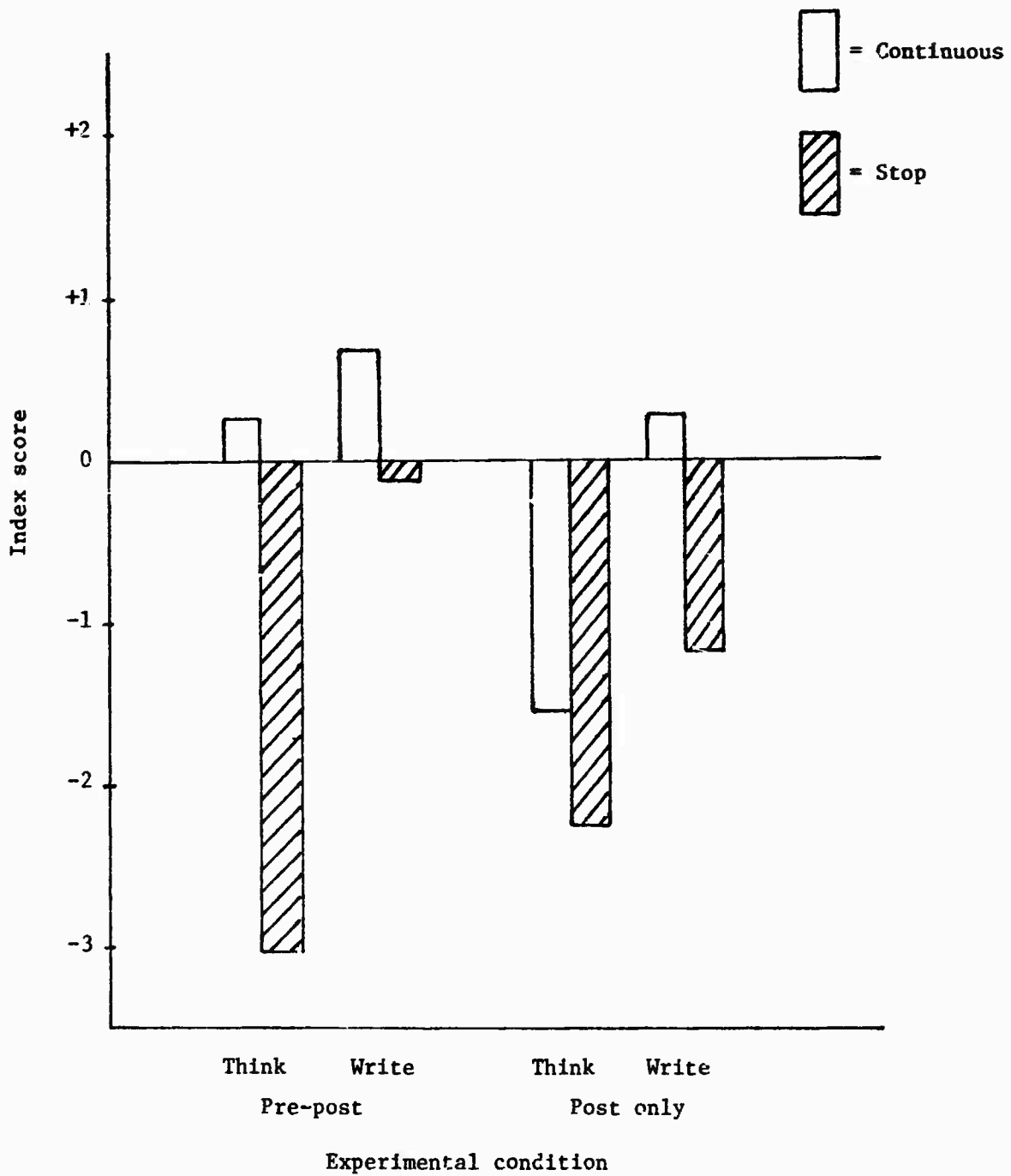
Figure 1

The experimental means summarized in Table 2 also support the overall patterns revealed in Table 1-A. With two minor exceptions, Point scores tended to be supportive. That is, although high opportunity subjects gave fewer supportive Point comments than did low opportunity subjects, nevertheless the overall thrust of their Point comments tended to be supportive. Conversely, the balance of comments in the Source/Communication and Subject Generated categories tended to be counter,



FIGURE 1

Mean Directional Index Scores by Experimental Condition  
for Total After-Comments



Note. Negative score indicates more counter comments.

with high opportunity subjects more counter than low opportunity subjects. Finally, the means for number of supportive and number of counter comments produced under the various experimental conditions, and analyses of variance performed on these scores, indicate that increasing opportunity to comment had the effect of both increasing the number of counter comments and, to a lesser extent, decreasing the number of supportive comments across all categories of after-comments.

Turning to comments produced during message reception, a somewhat different pattern emerged (see Tables 4 and 5). First, mean counterarguing scores in the Total category were all positive (supportive) as opposed to the negative scores for after-comments. Second, although high opportunity subjects generally produced more counter comments than did low opportunity subjects, they also produced more supportive comments (hence the reversal of three directional signs in Table 5). Indeed, in the Total and Point categories, Stop subjects produced many more supportive than counter comments (again a reversal from scores on after-comments). And finally, the only striking differential effect on counterarguing of increasing opportunity was limited to Subject Generated comments. This was the only category in which measures other than simple counts of supportive and counter comments revealed significant differences, and the only category in which those scores were both negative and large.

Recalling our earlier points, that during reception high opportunity subjects produced significantly more overall comments (see row 1, Tables 4 and 5), that the majority of all during-comments were Point comments (62%), and that most of these were supportive (83%),

helps to explain these results. Clearly the preponderance of Point comments accounts for the positive scores found in the Total category. And it is worth noting that while Total scores for high opportunity groups are supportive, they are less supportive than for low opportunity groups. That is, while increased opportunity mediated an increase in supportive comments, it mediated an even greater increase in counter comments.

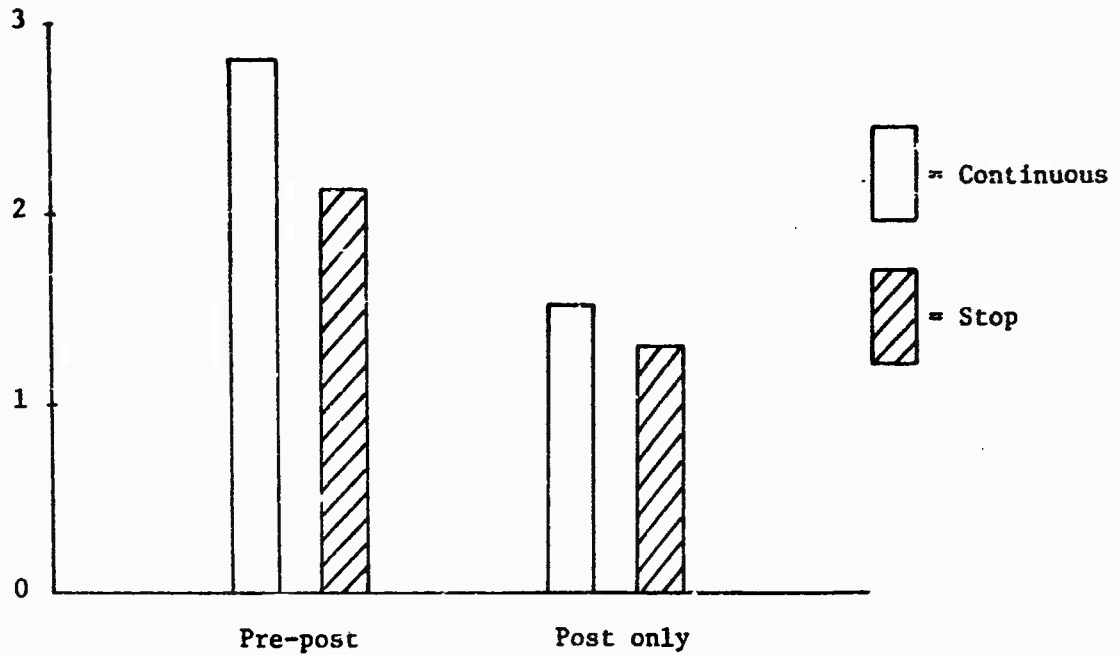
The significant increase in counters occurred in the Subject Generated category (although the means are also in the predicted direction for Source/Communication comments). Indeed, to a large extent the less supportive total scores for high opportunity groups can be attributed to the significantly more counter Subject Generated scores for the high opportunity groups. The mirror-like reversal graphed in Figure 2, which presents directional index scores for the Total and the Subject Generated categories, illustrates this point. If we were to compute a directional index score omitting only Subject Generated comments, scores for the high opportunity conditions would be more supportive than scores for low opportunity conditions.

Figure 2

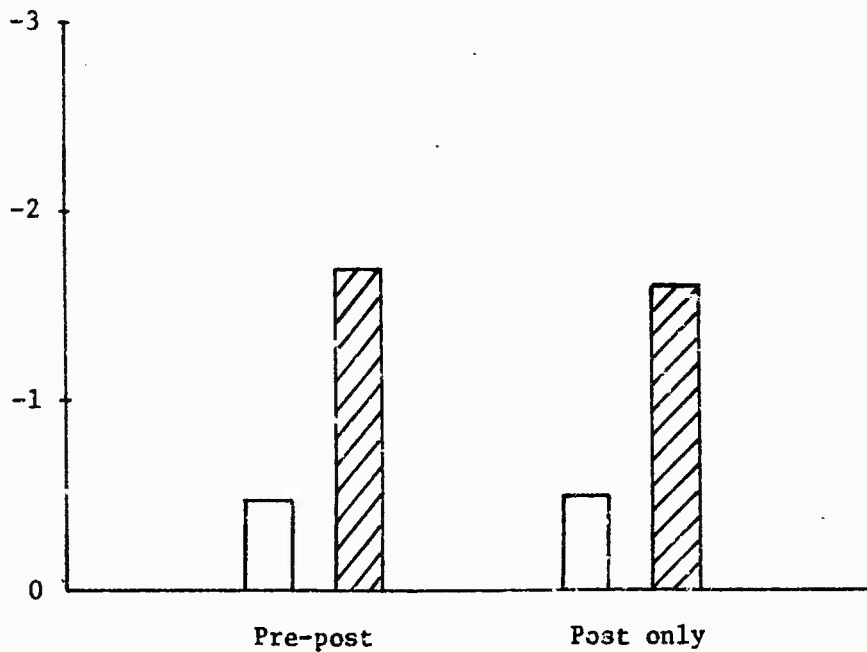
As indicated in Table 5, analyses of during-comments also revealed two effects for commitment, one approaching and one reaching statistical significance. Committed subjects gave marginally ( $p < .10$ ) more counter comments in the Point category than did non-committed subjects, an effect due solely to high opportunity, non-committed subjects producing more counters than subjects in any other group (interaction  $p < .05$ ). Given the minimal number of counter comments in the Point category and the relatively consistent effect for opportunity on number of comments across all content categories, we are inclined

FIGURE 2

A. Mean Directional Index Scores by Experimental Condition  
for Total During-Comments



B. Mean Directional Index Scores by Experimental Condition  
for Subject Generated During-Comments



to attribute this effect more to increased opportunity than lack of commitment. The main effect due to committed subjects producing more supportive Source/Communication comments is more difficult to explain. It may simply be a chance effect, particularly since the Source/Communication category accounted for only 11 percent of all during-comments, making the reliability of such scores suspect.

To summarize, then, as with after-comments the overall thrust of during-comments tended to be supportive in the Point category and counter in the Source/Communication and Subject Generated categories. Unlike after-comments, however, most during-comments were directed at a specific point in the message, hence Total scores for during-comments were supportive. And again unlike results obtained with after-comments, instead of a decrease in number of supportive comments, providing subjects with increased opportunity to comment mediated an increase in supportive comments. The result was that only in the Subject Generated category did increasing opportunity mediate truly counter counterarguing scores. It remains to be seen, of course, how these scores relate to resistance.

#### Opinion Effects

Experimental effects on subjects' opinions were assessed via three separate analyses. The first was based on the post-message opinion measure and included all 163 subjects in all experimental conditions. The second was based on change scores, hence included only those 80 "committed" subjects who responded to the pre-message opinion item. The third was based on post-message opinion scores, but included only the 79 subjects who participated in the "note-taking" conditions.

This last analysis was necessary for comparisons to be reported in the following section. Table 6 presents mean opinion scores for experimental conditions.

Table 6

Analysis of variance for post scores including all eight experimental conditions revealed a single significant effect due to an interaction between commitment and opportunity ( $F=5.87$ ;  $df=1,155$ ;  $p < .05$ ). As revealed by the means in the first row of Table 6, subjects who were committed and given increased opportunity to produce counterarguments resisted more (produced lower opinion scores) than did subjects in any other conditions.

A similar result obtained when change scores produced by Pre-post subjects were submitted to analysis of variance. This analysis, of course, included only two factors, hence the significant effect was a main effect for opportunity, subjects in the Stop condition manifesting considerably less change than their Continuous condition counterparts ( $F=11.61$ ;  $df=1,76$ ;  $p < .01$ ). No other  $F$  ratios exceeded a value of 1.

Finally, the two factor analysis of variance on post scores including only subjects who participated in the Write conditions continued the same pattern, although the obtained interaction between commitment and opportunity fell just short of statistical significance ( $F=3.46$ ;  $df=1,75$ ;  $p < .10$ ). Again, subjects who responded to the pre-test and who were given increased opportunity to comment manifested more resistance.

#### Counterarguing and Resistance

As Table 7 indicates, bivariate correlations between after-comments and opinion scores and between during-comments and opinion scores

TABLE 6

Mean Opinion Scores by Experimental Conditions

Experimental condition  Opinion score	Pre-post				Post only			
	Continuous		Stop		Continuous		Stop	
	Think	Write	Think	Write	Think	Write	Think	Write
Post score	6.82	7.20	4.42	4.32	6.55	6.35	7.05	6.80
Change score	2.82	2.80	.95	.05	----	----	----	----

Note.--Higher scores indicate greater acceptance of the position advocated.

revealed significant relationships between counterarguing behavior and resistance to persuasion. That is, opinion scores varied with counterarguing scores. The inverse relationship between counterarguing and persuasion is most clearly seen, of course, in the negative correlations obtained using number of negative comments.<sup>24</sup>

Table 7

As noted earlier, however, relationships between measures of counterarguing and resistance do not mean the former cause the latter. For example, since after-comments were elicited following subjects' responses to the opinion measure, the relationships in part A of Table 7 may derive from subjects' attempts to justify or rationalize their opinion position rather than the reverse. During-comments, on the other hand, since they preceded subjects' taking of an opinion position, are more easily viewed as possible mediators of the position taken. Still, even with during-comments there is the possibility that the relationship is not causal. Increased opportunity may independently mediate an increase in counterarguing and a decrease in persuasion -- the former not influencing the latter at all.

That counterarguing behavior need not necessarily mediate resistance to persuasion is shown by comparison of the patterns of means obtained for counterarguing scores and for opinion scores (Tables 2, 4, and 6). Counterarguing score means typically revealed that increased opportunity to comment engendered more counter comments (or fewer supportive comments); however, opinion score means reveal that increased opportunity engendered lower opinion scores only when pre-message commitment accompanied increased opportunity. In other words, comparisons of these means indicate that increased counterarguing need not lead to increased resistance.



TABLE 7

A. Correlations Between Opinion Post Scores  
and After-Comments

Content category	N positive comments	Counterarguing measure		Intensity score	Weighted intensity
		N negative comments	Directional index		
Total	.37 <sup>c</sup>	-.22 <sup>b</sup>	.37 <sup>c</sup>	.41 <sup>c</sup>	.43 <sup>c</sup>
Point	.29 <sup>c</sup>	-.28 <sup>c</sup>	.36 <sup>c</sup>	.40 <sup>c</sup>	.42 <sup>c</sup>
Source/communication	.12	.08	-.03	.01	.09
Subject generated	.28 <sup>c</sup>	-.23 <sup>b</sup>	.36 <sup>c</sup>	.38 <sup>c</sup>	.38 <sup>c</sup>

Note. -- Includes all 163 subjects.

B. Correlations Between Opinion Post Scores  
and During-Comments

Content category	N positive comments	Counterarguing measure		Intensity score	Weighted intensity
		N negative comments	Directional index		
Total	.15	-.34 <sup>b</sup>	.30 <sup>b</sup>	.37 <sup>c</sup>	.38 <sup>c</sup>
Point	.10	-.21	.15	.25 <sup>b</sup>	.31 <sup>b</sup>
Source/communication	-.03	-.05	.03	.03	.07
Subject generated	.26 <sup>a</sup>	-.33 <sup>b</sup>	.40 <sup>c</sup>	.40 <sup>c</sup>	.39 <sup>c</sup>

Note. -- Includes 79 subjects who participated in Write conditions.

<sup>a</sup> $Z > 1.96$ ;  $p < .05$

<sup>b</sup> $Z > 2.58$ ;  $p < .01$

<sup>c</sup> $Z > 3.09$ ;  $p < .001$

On the basis of these means, we hypothesized that counterarguing mediated resistance when subjects were previously committed to a position. Support for this hypothesis required at least two steps -- the first a statistical demonstration of a dependent relationship between counterarguing scores and opinion scores, the second a logical argument to establish that counterarguing mediated resistance rather than the reverse. Analysis of covariance provided the means to accomplish the first step and the results of the covariance analysis in the context of our experimental design offered the means to attempt the second.

If the hypothesis is correct, then to the extent that removing the influence of counterarguing scores from opinion scores by covariance attenuates the effect of the opportunity manipulation on opinion scores, we can at least infer a dependent relationship between the two sets of scores. Since the hypothesis is relevant only to committed subjects, we report analyses using only subjects who participated in the Pre-post conditions. For after-comments, this resulted in two-way analyses crossing the opportunity and the storage conditions. For during-comments, only subjects who participated in note-taking (Write) conditions could be included; hence one-way analyses comparing high and low opportunity subjects were performed. Table 8 presents F ratios for the effect of the opportunity manipulation on opinion scores before and after covariance analyses.<sup>25</sup> The obtained F ratios demonstrated that removing variance accounted for by counterarguing scores attenuated the effect of opportunity on opinion scores.

Table 8

Looking first at analyses using after-comments as covariates, we discover that some decrement in F value was obtained for each of the

TABLE 8

F Values for the Effect of Opportunity Manipulation  
on Opinion Scores for Pre-tested Subjects  
Before and After Covariance Analyses

Covariate/dependent variable	Comments produced:	
	After reception	During reception
None	9.14 <sup>c</sup>	5.56 <sup>b</sup>
Total		
Directional index	5.89 <sup>b</sup>	5.33 <sup>b</sup>
N supportive	6.27 <sup>b</sup>	5.31 <sup>b</sup>
N counter	7.66 <sup>c</sup>	4.18 <sup>b</sup>
Intensity	5.55 <sup>b</sup>	5.14 <sup>b</sup>
Weighted intensity	5.60 <sup>b</sup>	5.17 <sup>b</sup>
Point		
Directional index	8.01 <sup>c</sup>	5.21 <sup>b</sup>
N supportive	8.46 <sup>c</sup>	5.16 <sup>b</sup>
N counter	8.10 <sup>c</sup>	6.23 <sup>b</sup>
Intensity	7.44 <sup>c</sup>	5.40 <sup>b</sup>
Weighted intensity	7.56 <sup>c</sup>	5.29 <sup>b</sup>
Subject generated		
Directional index	6.41 <sup>b</sup>	3.18 <sup>a</sup>
N supportive	7.75 <sup>c</sup>	6.37 <sup>b</sup>
N counter	8.22 <sup>c</sup>	3.09 <sup>a</sup>
Intensity	6.22 <sup>b</sup>	3.29 <sup>a</sup>
Weighted intensity	7.27 <sup>c</sup>	5.20 <sup>b</sup>

Note. -- Contains only Ss in committed conditions.

<sup>a</sup><sub>p</sub> <.10

<sup>b</sup><sub>p</sub> <.05

<sup>c</sup><sub>p</sub> <.01

various measures in each of the content categories, the largest decrement occurred using measures in the Total category, and none of the analyses totally removed the effect for opportunity. Indeed, in no case was the F ratio reduced to less than statistical significance ( $p < .05$ ).

Turning to during-comments, a different pattern emerged in that with the exception of the number-of-counters measure, changes in F ratio due to covariance in the Total and Point categories were trivial. Only in the Subject Generated category was there any meaningful attenuation of the pre-covariance F ratio. As with after-comments, removing the effect of differential counterarguing during reception attenuated, but did not completely remove, the effect of the opportunity manipulation. While F values after covariance were reduced to less than the .05 level of significance, it must be kept in mind that the F value before covariance was  $p < .05$  (where, for the larger N included in analyses of after-comments, the pre-covariance F ratio was  $p < .01$ ).

Although there is no direct statistical procedure to test differences between F values, computations of the Omega squared statistic (Hayes, 1963: 325) indicated that in both sets of analyses the opportunity manipulation accounted for approximately 10 percent of the variance in opinion scores before covariance and for about 5 percent of the variance after covariance (when counterarguing measures which most reduced F values were used as covariates).<sup>26</sup> In other words, approximately half the effect of the opportunity manipulation appears to be attributable to a dependent relationship between counterarguing scores and opinion scores.

Of course, we must still ask whether subjects' counterarguing behavior mediated opinion scores or whether their post-message opinions mediated counterarguing scores. Since subjects responded to the opinion measure before listing thoughts, after-comments could be either valid indicators of the kinds of comments which occurred during reception or they could be justifications of the position taken after reception. Such is not the case when during-comments are considered. Not only were these comments produced before subjects gave their opinions, but also before they even knew that they were going to be asked for post-message opinions. Hence, there is no question of the temporal ordering necessary to infer causality.

Moreover, when comments were produced during message reception, effective counters clustered in the Subject Generated category, but when produced after message reception, counters in all content categories caused some attenuation of the F ratio. Examining the results with after-comments further, to the extent that counters are produced in order to justify an opinion already adopted, it seems logical to assume that these counters would occur across all content categories, (thus manifest their strongest effect in the Total category). Certainly there is no reason to expect commitment to an opinion position to mediate effective counters within only one of the content categories. Conversely, while there is no reason to assume that comments which mediate an opinion position could not occur across all content categories, when effective counters cluster within one category it seems even more reasonable to impute a causal role to them. In short, given the results of the covariance analyses, the fact that during-comments fulfill the necessary temporal conditions to infer causality,

and the fact that one specific type of during-comments account for almost all of the obtained relationship between counters and opinions, it seems safe to conclude that the counterarguing engendered by the opportunity manipulation and measured during reception mediated some of the obtained resistance to persuasion.

#### DISCUSSION

On the basis of the foregoing, several generalizations seem warranted. First, there was a clear difference in the nature of counterarguments produced during and after message reception. For example, while a slight majority of after-comments countered the message, a large majority of during-comments supported it. While a plurality of after-comments fell into the Subject Generated category, the large majority of during-comments fell into the Point category. These results are probably best explained in terms of the time available to subjects to comment. During reception, subjects must simultaneously produce comments and process incoming information. Thus, it is probably easier to simply respond to a point in the message, accounting for the large number of during-comments in the Point category and the fact that they were mainly supportive. Conversely, after reception, when subjects had time to think, they appear to have integrated more of their own belief system into their responses, resulting in an increase in the number of Subject Generated comments. This interpretation receives support from the increase in Subject Generated comments found during reception when opportunity (time) was increased. Finally, as shall be covered more fully below, it appears that during-comments mediated resistance to persuasion while after-comments may have been rationalizations of the opinion position adopted. In short,

there is good reason to question whether comments listed after message reception, a procedure followed in many of the studies reviewed earlier, are accurate indicators of counterarguing which may have taken place during reception.

It is also clear that increased opportunity mediated an increase in overall production of comments, and that there was a tendency for these comments to be counter to the message. Although the overall increase in counters is clearest in analyses of after-comments, it is probably more important to examine the results for during-comments. During reception, subjects given opportunity to list their thoughts (Stop group) manifested increases in the number of both supportive and counter comments. Most supportive comments, however, fell into the Point category, the only one to produce a positive directional index. Increased opportunity produced more counter comments within the Source/Communication and Subject Generated categories. Indeed, the Subject Generated category was the only classification which produced a significant difference on the directional index -- a difference indicating that more time led to more counterarguing.

It is also interesting to note that this was the only category of during-comments clearly related to opinion scores. As mentioned above, it appears that when subjects had time to process persuasive information, an effective way of operating was to interpret and evaluate the message in terms of their own belief system, rather than simply responding to external stimuli per se. Thus, the most "functional" comments appear to have been Subject Generated. These results dovetail nicely with those of Greenwald (1968). They are also congruent with results of role playing studies (Janis, 1968) which have shown that

subjects who generate their own counterattitudinal arguments are more influenced than subjects who simply present arguments produced by someone else.

Finally, our most intriguing results have to do with the relationship between counterarguing and resistance to persuasion. These results are especially revealing in the context of the opportunity main effect obtained for counterarguing scores and the opportunity by commitment interaction obtained for opinion scores. Given earlier persuasion research, it is somewhat surprising that neither opportunity nor commitment produced a main effect on opinion scores. The results of various distraction studies, McGuire's (1963a) finding that resistance increased with the number of attack arguments refuted, and the generally inverse correlations between counterarguing and yielding reported in counterarguing studies, all lead one to expect a linear relationship between counterarguing and resistance. Similarly, there is at least tentative evidence to suggest that resistance might be a function of commitment to a position (McGuire, 1969: 261-62),<sup>27</sup> although there is also evidence to suggest that a pre-test does not always successfully commit subjects (e.g., Lana, 1959). Our results suggest, however, that the expected relationship between counterarguing and resistance obtains only when some degree of commitment has occurred (or that a relationship between commitment and resistance may depend on subjects' counterargument production). Certainly they reveal that neither counterarguing nor commitment, at least when the latter is operationalized in the form of a pre-test, are sufficient to insure resistance.

The critical question, then, becomes what is there in the nature of having responded to a pre-test and being provided an opportunity to



counterargue that engenders resistance to persuasive attack? There appear to be several possibilities, each of which may contain some kernel of truth.

First, to the extent that the critical effect of the opportunity manipulation was the counterarguing it engendered, it may be that the pre-test acted as a catalyst or triggering mechanism for the resistance inducing components of the counterarguments. That is, given time, most of us could probably generate arguments on either side of a relatively unfamiliar issue, but production of such pro and con comments may be little more than an intellectual exercise unless we have some structure or reference point to which these counters can be linked (Roberts, 1971). It may be that taking a position on the pre-test provided such a reference point, acting to make the arguments "meaningful" vis-a-vis resistance.

Second, the process could be reversed. Rather than the pre-test "activating" the counterarguments, the production of counters might make meaningful or salient the commitment inherent in responding to a pre-test. McGuire (1969) argues that a person's initial belief should become more resistant to the extent that he internally thinks about that belief. Thus, it may be that producing counters -- particularly Subject Generated counters -- recalled to the receiver the fact that he had taken a pre-message position.

Third, both of the above may be correct. The interaction may be dynamic, the pre-test catalyzing meaning in counters and counters making the pre-test more salient.

And fourth, the opportunity manipulation may have engendered more than counterarguing, high opportunity subjects having time not only to

generate counters, but also time to think back about their pre-test position independent of counterarguing. Implicit here is something of an additive model wherein Stop subjects used some of the time to think about their initial belief and other of the time to weaken the persuasive attack by countering at least some of its arguments, but did both of these things independently.

Although available data do not provide a complete test of the preceding possibilities, they do provide tentative evidence that whatever is engendered by combining a pre-test and opportunity to comment operates to affect both commitment and the impact of counterarguments. Even though the opportunity manipulation located significant differences in counterargument production but not in resistance to persuasion, bivariate correlations that ignored commitment revealed a positive relationship between counterarguing and resistance. Such relationships provide some support for the contention that counterarguing at least mildly weakens the force of a persuasive attack, regardless of commitment.

More to the point, however, analyses of covariance revealed that counterarguments accounted for some, but not all, of the variance in opinion scores located by the commitment manipulation. That is, given the resistance engendered by combining pre-test and opportunity, counterargument production mediated some resistance, but commitment, or some other unexplicated variable inherent in increased opportunity or in responding to a pre-test, accounted for another part of the obtained resistance. At the least, it appears that both counterarguing and responding to a pre-test simultaneously added to and gained from the other.

### TOWARD A COUNTERARGUING MODEL

Given the studies reviewed earlier and the results of our own research, we can at least begin to formulate a possible model of counterarguing behavior and resistance to persuasion.

In 1964 Maccoby speculated about a neo-Guthrian approach to persuasion. Briefly, his formulation posited that, possibly, reception of a persuasive message, understanding it, and being persuaded by it all take place immediately and simultaneously -- that the immediate intake of a persuasive message might lead to immediate persuasion. Following a modified contiguity learning theory, however, he argued that such persuasion can be easily supplanted by subsequent counter-persuasion -- including self-generated counter-persuasion. For example, if one receives a message counter to what one holds near and dear, the contention is that there simultaneously occur understanding of the message and, for the nonce, persuasion by that message. However, almost immediately afterwards, one can say to oneself, "This is hogwash because . . ." and think up or rehearse counterarguments of various sorts. Hence, the initial immediate persuasion is nullified by an even more recent message, albeit one which is self-generated.

This is not to say that only the most recent stimulus (e.g., single most recent counter) will determine the response. Persuasive propositions, like any others, may be built up and supported by a number of related propositions. Thus, Maccoby's (1964) contention was that the configuration of all comments, counter or supportive, that a receiver generates and/or rehearses during reception exerts strong influence on the final response.

Greenwald's (1968) cognitive response formulation of attitude change posits a very similar model. As noted earlier, Greenwald contends that receivers' cognitive responses rehearsed during reception can be classified in terms of their directionality (supportive of or counter to the persuasive appeal). Such responses become incorporated into the cognitive attitude structure leading to a shift in the central tendency of that structure. Thus, an overt attitude or opinion response represents the direction in which the attitude structure has been "conditioned" by the total configuration of cognitive responses made during reception. And of course, Greenwald's research indicates that internally generated responses are of primary importance.

Implicit in both these formulations, as well as in inoculation and distraction research, is the assumption that to the extent to which the configuration of a receiver's cognitive responses made during reception can be characterized as countering a persuasive appeal, he should resist that appeal. While this assumption seems fundamentally sound, our research implies that there needs to be at least some minor modification or elaboration of the general model it leads to. That is, our results indicate that counterarguing need not always mediate resistance, and that some kinds of counters may be more important than others.

Given the mediational role played by Subject Generated comments in our study (and in the work reported by Greenwald, 1968), and the finding that counters were primarily effective when preceded by a mild commitment manipulation, it seems to us that what must be considered in analyzing approaches to the resistance mediating effect of counterarguing is the concept of "meaning" as it occurs during information processing. Just as the meaning of any overt communication

depends on the receiver's existing cognitive structure -- of his "image" of the situation he is in (Roberts, 1971) -- receivers also interpret internally generated responses relative to their cognitive state when that response is made. Indeed, their image of a situation at any given moment probably mediates the nature of whatever internal responses or cognitions they generate. In other words, depending on how a receiver perceives a total communication situation, what appears on some objective level to be a counterarguing response may not be, on a subjective level, a counterargument at all.

For example, a debater, who is required to argue both sides of an issue, is perfectly capable of producing arguments directly opposite to what he believes. While to an observer his comments may appear to be counters, to the debater they may be little more than conventional responses demanded by the situation. Indeed, covertly, he may be arguing vigorously for the opposite point of view. Similarly, a reasonable case can be made that, at least in this culture, we are trained to generate counterarguments simply because we are socialized to value critical examination of objects, events, or issues. In these instances, our counters are not so much indicators or mediators of resistance as they are responses to other aspects of the situation (e.g., it's time to play the devil's advocate; I must be a critical, thoughtful man; etc.).

What all this means is that counterarguments, at least as we usually conceive of them, may not be counterarguments at all unless we have reason to resist an appeal and "decide", so to speak, that we should fight back. Once we have made such a "decision," then the substance of a given counter probably "means" something different than it might have had we not made such a decision.

This returns us to our earlier point about the possible need for a distinction between motivation to resist and motivation to counterargue. The model we are proposing posits that if a receiver truly deals with a message,<sup>29</sup> both motivations, but particularly motivation to resist, must be present for resistance to occur. That is, on the one hand we might generate counterarguments all day, but as long as the overt attitude response required of us is perceived to be of little importance, resistance need not follow. Our counters have done little or nothing to attenuate the strength of the persuasive appeal -- they do not "mean" resistance. This case is exemplified by non-pretested, high opportunity subjects in the study just reported. On the other hand, we might have reason to resist a persuasive attack, but to the extent that we truly deal with the message and are unable to counter its arguments, then we will probably yield. This case would describe that rare instance when a persuasive source totally overwhelms opposition arguments, and to some extent probably explains the "defusing" effect of two-sided messages and of McGuire's (1964) inoculation treatment.

To summarize, then, our proposed model holds that, at least in this culture, to the extent that people truly attempt to process persuasive information (perhaps any information), they will probably produce "counterarguments" of some kind. The "meaning" of such counters, however, will vary with a receiver's motivation to resist. Motivation to resist may derive from many sources: the nature of the issues dealt with (the more important the more resistance), perceptions of source (disagreement with an incompetent or untrustworthy source regardless of issue), a need to maintain or appear to maintain consistency

(defending a position taken on a pre-test, as in the present study), or many other conditions that have been demonstrated to mediate more or less opinion change.

Given motivation to resist a persuasive appeal, receivers will interpret their own counterarguments -- give them meaning -- in terms of how well they refute points in the attacking message. Resistance per se, then, will be a function of how successfully the receiver perceives himself to have refuted the attack. Finally, we would contend that the most "successful" counters will be internally generated (Subject Generated comments) for the simple reason that by their very nature they are more congruent or meaningful to the receiver's existing belief system. That is, Subject Generated comments are more likely to pinpoint what the receiver believes to be important about the issue; hence they are more likely to be effective -- to "mean" resistance.

This model is not too different from those proposed by Maccoby (1964) and Greenwald (1968). It, too, holds that resistance will depend on the configuration of supportive and counter responses generated by a receiver during reception of a persuasive message. It simply elaborates on prior models in its separation of counterargument production and motivation to resist, arguing that the meaning, hence the effectiveness, of the former depends on the nature of the latter.

And finally it should be noted that this model is highly speculative. While it appears to account for most of the findings summarized and reported above, so too might other models. It does, however, have the advantage of accounting for instances when apparent counter-arguing does not lead to resistance, and perhaps more important, it points to the value of considering persuasion in the context of information processing, particularly as it relates to meaning.

NOTES

1. The work reported here was conducted under a contract from the Office of Naval Research, No. N00014-67-A-0112-0032, entitled "Some Basic Processes in Persuasion."
2. Regretfully, neither McGuire nor Tannenbaum (1967), who has also done research in this area, have reported experiments on the relative efficacy of the two resistance inducing treatments using controverted issues; that is, "non-germ-free" beliefs.
3. It is worth noting how neatly some of the results of research on one-sided vs. two-sided messages mesh with the assumptions underlying inoculation theory. For example, consider Hovland, Lumsdaine and Sheffield's (1949) finding that both men with more education and men initially in strong disagreement with a message arguing that the war with Japan would continue for some time after Germany's surrender were more affected by a two-sided message. To the extent one is willing to assume that more educated men are better prepared to counterargue with a persuasive message, and that men initially opposed to an advocated position are more motivated to defend against a persuasive attack, the results can be interpreted to imply that among these men the two-sided message may have undercut the basis for resistance for much the same reasons that inoculation is presumed to stimulate the basis for resistance (also see Hass and Linder, 1972).
4. Most inoculation studies are designed such that subjects serve as their own controls, with various defense treatments being counterbalanced across a number of different beliefs, all



beliefs being attacked during the attacking session, and all subjects indicating their opinions on all beliefs after the attack. It should also be noted that all studies reported here used written messages for both the defensive and attack sessions, hence subjects were generally in control of the amount of time spent a) processing the persuasive message and b) counterarguing against that message. Recently, in a study yet unreported in the literature, we have found an inoculation treatment is also successful when the attacking message is presented via film -- that is, when subjects cannot control the rate at which they process the persuasive message.

5. It should be noted that the investigations reported by Tannenbaum (1967) approach the induction of resistance to persuasion from the perspective of congruity theory (Osgood and Tannenbaum, 1955). While these, and a number of experiments left uncited support predictions derived from congruity theory, this is not the place to examine that approach to persuasion. Suffice it to say that a number of the findings, albeit not all of them, fit nicely into the counterarguing model underlying inoculation theory.
6. Similarly, distracting a receiver from generating agreeing comments about a pro-attitudinal appeal should result in less acceptance of the appeal. Both results assume the issue dealt with by the persuasive message is involving enough to the receiver to motivate agreeing or disagreeing under normal conditions.

7. Not surprisingly, at schools where the existence of fraternities was not an issue, thus where counter comments were less likely to occur, the distraction effect was not obtained.
8. Gardner (1966) used a marketing communication and Breitrose (1966) a message about the political situation in New Zealand, neither of which can be considered very involving. The motivating impact of the Vohs and Garrett (1968) issue is somewhat more equivocal in that they used a pro-Ku Klux Klan message. However, although most people hold anti-Klan opinions, it can be argued that the Klan is something of a dead issue, therefore would not be likely to engender much counterarguing.
9. In addition to the irrelevant film used by Festinger and Maccoby (1964), other studies which have supported the distraction hypothesis have used such distractors as viewing of irrelevant slides (Rosenblatt, 1966), orienting receivers to attend to the speaker's personality (Freedman and Sears, 1965), proofreading while reading the persuasive communication (Dorris, 1967), copying a list of digits (Kiesler and Mathog, 1968), and attending to a panel of flashing lights (Osterhouse and Brock, 1970).
10. It should be noted, however, that in several of the experiments counterarguing behavior was not the central or sole concern of the study (e.g., Janis and Terwilliger 1962; Greenwald, 1968), and in several others counterarguments were produced in anticipation of a persuasive message (Brock, 1967; Baron and Miller, 1969).
11. Greenwald and Mayer (n.d.) write: "Positive reactions would correspond to acceptance of the communicated opinions or

arguments and might consist of overt or covert agreement with the communication, thinking of or voicing arguments supporting those stated in the communication, deciding to take action suggested in the communication, reviewing the positive qualifications of the communicator, etc. Negative reactions would amount to rejection of the communication and might consist of overt or covert disagreement with or denial of the communicated opinions and arguments, counterarguing, deciding to take action opposed to that suggested, derogating the communicator, etc. By virtue of their rehearsal in the persuasion situation, such cognitive responses are assumed to become incorporated into cognitive attitude structure -- in other words, conditioned to the attitude object or opinion topic specified in the communication. This process constitutes a cognitive attitude change -- i.e., a shift in the affective central tendency of the cognitive repertory conditioned to the attitude object -- in the direction (positive or negative) represented by the new response content" (p. 2).

12. Recently Hass and Linder (1972) reported several experiments comparing one-sided versus two-sided messages with hypotheses derived from the notion that a two-sided appeal mitigates receivers' counterargumentation. Although these studies did not measure counterargument production, the authors present a convincing model of how counterarguing behavior might interact with such message components.
13. A partial replication (Cook, 1968) used two and ten arguments with the same results.

14. A second counterarguing score based on number of "thoughts" was also used with similar, although weaker, results. It should also be noted that subjects never did receive the persuasive message, all analyses being conducted on anticipatory responses.
15. Although, as noted earlier, Cook (1969) had subjects write their counters as they read points attacking a belief, his "message" consisted simply of a list of discrete points. It was not a message in the usual sense of a well rounded statement logically connecting a number of arguments to support a conclusion.
16. The assumption here is that threat need not be fear arousing. For example, a threatened tuition increase may arouse anger, disgust, consternation, and so forth among college students, without arousing the kind of fear for health or life assumed to be present in the fear arousal experiments conducted by Janis and his colleagues (Janis, 1967).
17. The exceptions, of course, are the cultural truisms employed in inoculation studies (McGuire, 1964; Tannenbaum, 1967) and by Cook (1969). By definition a cultural truism is not a controverted issue.
18. It should also be noted that although inoculation studies start with issues about which recipients have few available defensive materials, the inoculation procedure simultaneously manipulates motivation (via threat) and counterargument availability (via refutation of threat), rendering independent comparisons of the two variables impossible.
19. Detailed definitions and coding instructions may be obtained from the authors.

20. Originally separate, these categories were collapsed when so few comments obtained in the final experiment were classed into either one.
21. This definition was based on Greenwald's "recipient generated" category.
22. Determination of intercoder reliability focused on subjects rather than comments. That is, our concern was not with whether any single comment was similarly coded by all coders but with whether scores summarizing all comments produced by any single subject were similar across coders.
23. Each of these categories accounted for very few comments, creating many tied ranks with score = 0, thus attenuating  $W$ .
24. Within condition correlations revealed the same pattern of results, although obtained coefficients were not statistically reliable due to the small  $N$  within each experimental group.
25. In the interest of brevity, measures in the Source/Communication category, which lacked reliability and which failed to correlate with opinion scores, are omitted. These scores are, of course, included in the Total category.
26. Omega squared ( $W^2$ ) provides an estimate of the amount of variance in a dependent variable accounted for by differential treatments on an independent variable. Hence the difference between  $W^2$  values computed before and after covariance should provide at least a rough estimate of the variance due to a manipulation attributable to the variable used as covariate. In the present case, for analyses using after-comments,  $W^2 = .096$  before covariance and  $W^2 = .055$  after covariance (using the intensity measure in the Total category as covariate (the measure most

reducing the F value). For analyses using during-comments,  $W^2 = .104$  before covariance and  $W^2 = .059$  after covariance (using the directional index in the Subject Generated category as covariate).

27. McGuire (1969) also points out that stability of commitment is a function of how public such commitment is.
28. It should be kept in mind that the failure of covariance analyses to remove all of the variance in opinion scores due to the opportunity manipulation may simply derive from error inherent in our measurement procedure.
29. Of course, a receiver could decide to resist and simply ignore the persuasive message.

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Eye Movements and Reactivity to Persuasion: A Pilot Study  
by Brury Sherrod

This paper describes a preliminary experiment investigating the relationship between "reflective lateral eye movements" and reactivity to a persuasive message.

Day (1964) has observed a lateral eye movement response which is associated with shifting attention from an external to an internal focus. Typically, when an individual is asked a question that requires him to reflect on the answer, he moves his eyes to the right or left as he considers his reply. It has also been observed that most persons move their eyes in the same characteristic direction with such consistency over repeated observations that they may be classified as "right movers" or "left movers" (Day, 1964; Duke, 1968).

The direction of such eye movements is of interest because it seems to have a number of correlates at the physiological, cognitive and personality levels (Bakan, 1969; Bakan and Shotland, 1969; Day, 1954, 1967a, 1967b, 1968). The present paper suggests yet another correlate of lateral eye movements; leftward eye movements are found to be associated with stronger reactivity to a persuasive message, while rightward eye movements are associated with more moderate reactivity.

The possible significance of eye movements has only recently been investigated. In his original work on the subject, Day (1964) speculated that "the left mover shows an internalized, subjective . . . distribution of attention in which he is more reactive to auditory and subjective visceral experience" while "the right mover shows an externalized actively

responsive distribution of attention, emphasizing the visual-haptic modes." More recently, Bakan (1969) has suggested that "left movers show a greater tendency to focus attention on internal subjective experiences" whereas "right movers show a greater tendency to external focus of attention."

These suggested psychological characteristics of left and right movers seem to be supported by a number of research findings. For example, the suggestion that left movers tend to focus attention on internal stimuli is supported by Bakan's (1969) finding that left movers are significantly more hypnotizable than right movers. Similarly, Bakan and Svorad (1969) found that left movers tend to have more EEG alpha activity than right movers. On the other hand, the suggestion that right movers tend to focus attention on external stimuli is supported by Bakan and Shotland's (1969) finding that right movers will perform the Stroop color-word interference test better than left movers.

If eye movements are in fact an indicator of a tendency to focus attention on internal or external stimuli, they may also be associated with a person's reactivity to a persuasive message. It is possible that left movers -- who have an apparent tendency to focus attention internally -- will react more strongly to a persuasive message than right movers. Left movers' stronger reactivity could be caused by their greater tendency to tap subjective experiences and generate internal stimuli relevant to the message. Such stimuli would constitute an addition to the external stimulus of the message itself, in either a pro or con direction, depending on the individual. Consequently, left movers would be exposed to more overall stimuli relevant to the message than right movers and could therefore be expected to respond more strongly. In other words, left

movers could be expected to have more extreme attitude change scores in response to a persuasive message -- in either a positive or a negative direction -- than right movers.

The reasoning behind this expectation is based, in part, on studies by Festinger and Maccoby (1964) and McGuire (1964), which suggest that people resist persuasion by counterarguing against a persuasive message. If this is true, it is reasonable to expect that left movers who resist a message may produce more effective counter arguments than right movers. However, it is also reasonable to expect that left movers who accept a message may produce more effective supportive arguments than right movers. If left movers do in fact produce more effective arguments -- of either a counter or supportive nature -- this again suggests that left movers should be found on the extremes of reactivity to a persuasive message; i.e., left movers should be either more resistant or more persuaded than right movers.

This study was designed to test the hypothesis that left movers are more reactive to a persuasive message than right movers.

#### Method

The hypothesis was tested in connection with an attitude change study which involved more than 300 subjects. Subjects heard a persuasive tape recording in small groups and immediately following the tape filled out a questionnaire which included an attitude measure. Half the sample also received a pre-test just prior to hearing the tape, so change scores were available for these subjects.

At the conclusion of the experiment, subjects were asked to leave the room individually, at which time the experimenter spent a few minutes with each subject and observed eye movements in response to the following five

questions: (1) Spell SOCIETY backwards. (2) How many letters are there in the word ANTHROPOLOGY? (3) Multiply 13 times 14. (4) I will call off six numbers and I want you to repeat them backwards: 1 4 7 3 6 5. (5) Can you think of an English word that starts with L and ends with C? The first eye movement made immediately following each question was scored as the lateral eye movement response for that question; movements with a vertical component were scored as to their lateral direction.

Eye movements were observed for 219 subjects. 86% of these made a majority of movements in the same direction and were classified as right or left movers, with 58% moving left and 42% moving right. The remaining 14% failed to make a majority of movements in the same direction because of indeterminable movements.

### Results

Of the subjects making a majority of eye movements in the same direction, 67 made five out of five (5/5) in the same direction; 62 made four out of five (4/5) in the same direction; and 60 made three out of five (3/5) in the same direction. (See Figure 1.)

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Insert Figure 1 about here  
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If these three groups are considered together, the hypothesis that left movers are more reactive to persuasion than right movers is not confirmed. Nor is the hypothesis confirmed when the 3/5 and 4/5 groups are considered individually. However, when the 5/5 group is considered by itself, the inference is supported that left movers are significantly more reactive to persuasion than right movers.



If we first consider only the 39 subjects in the 5/5 group who received both a pre and a post test, an F test of the ratio of change-score variances for the left and right movers groups shows the variances to be significantly different ( $F=6.91$ ,  $dfs=24,13$ ,  $p < .001$ ). Means for the same two groups are not significantly different, as extreme scores for the left movers tend to average out.

Next, post scores for all 67 subjects in the 5/5 group were computed as absolute deviations from the neutral point in the fifteen point attitude scale. (See Figure 2.) A t test of deviation score means for right and left mover groups shows left movers to be significantly more deviant from neutrality than right movers ( $t=2.16$ ,  $df=66$ ,  $p < .05$ ).

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 Insert Figure 2 about here  
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Perhaps the discrepancy in findings for the 5/5 group and the 3/5 and 4/5 groups may be explained by some initial observer error as well as the crudity of eye movements as a genuine measure of any underlying phenomenon. Given these problems, only the extreme 5/5 group may correctly identify "true" left and right movers. Probably more than five eye movements should be elicited in future research in order to clarify the problem.

#### Discussion

The apparent relationship between eye movements and reactivity to a persuasive message can possibly be considered in terms of functional brain assymetry -- along with hypnotizability, output of EEG alpha, and Stroop test performance. According to Bakan (1969),

right or left eye movements . . . are controlled contralaterally by activity in Brodman's area 8, the frontal eye fields. It may be that the left or right movement associated

with the reflective process is symptomatic of easier triggering of activities in the hemisphere contralateral to the direction of eye movement. Differences in ease of triggering may in turn be related to a wide variety of individual differences in cognitive, personality and psychological variables.

Although highly speculative, this explanation seems to account for the phenomena mentioned above and is consistent with other research findings concerning hemispherical specialization and cerebral dominance for certain kinds of tasks. From a variety of studies Bakan (1959) concludes that "a relatively more active right hemisphere, possibly indicated by direction of eye movements, implies a syndrome consisting of greater use of pre-verbal activities such as imagery, greater hypnotic susceptibility, greater interest in humanistic subjects, less mathematical ability and more EEG alpha activity."

To this conclusion we can add the tentative suggestion of the present data that reactivity to persuasive messages may be yet another correlate of lateral eye movements.

Figure 1  
Pre-test--Post-test Attitudes Scores  
for Left Movers (L) and Right Movers (R)

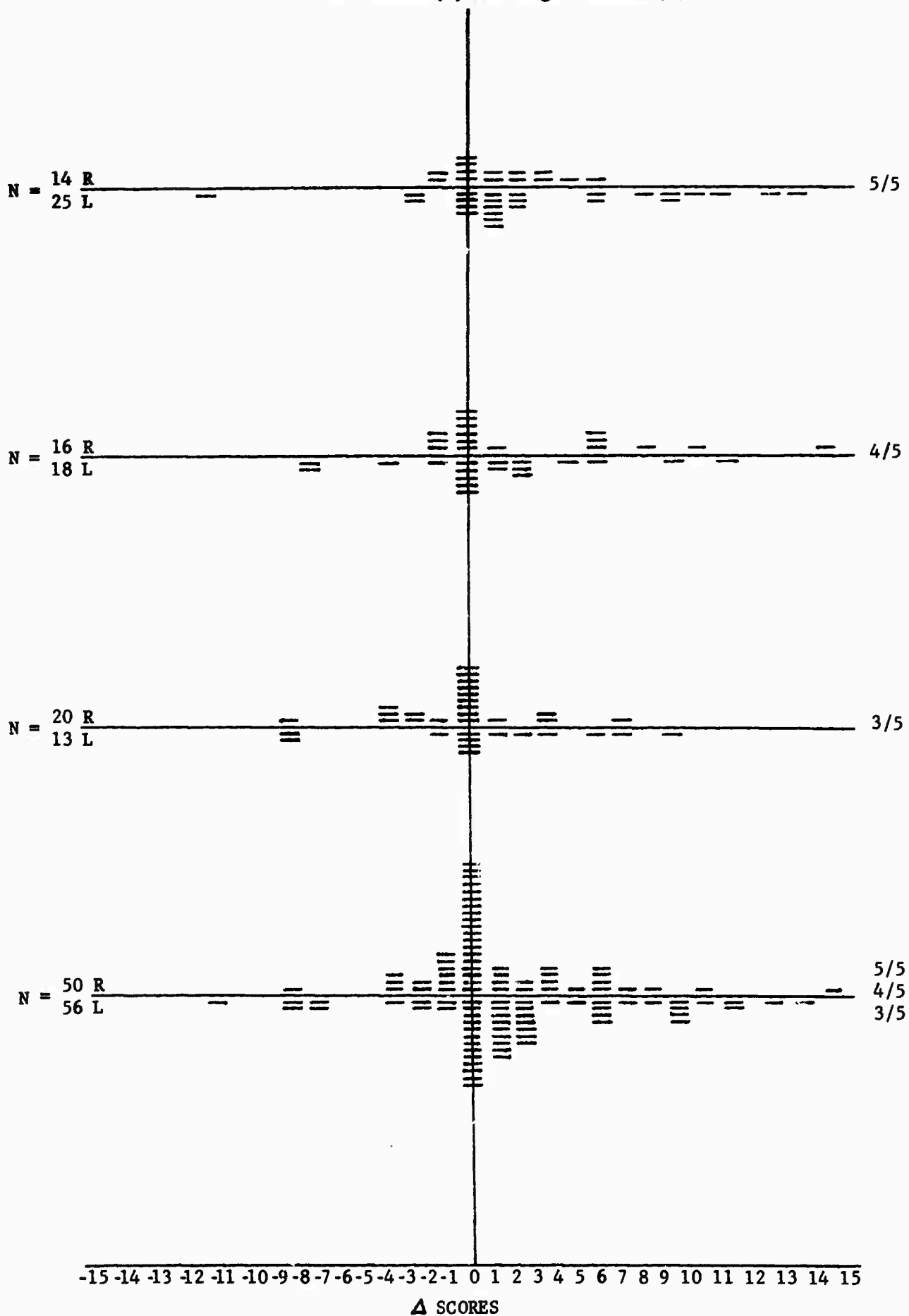
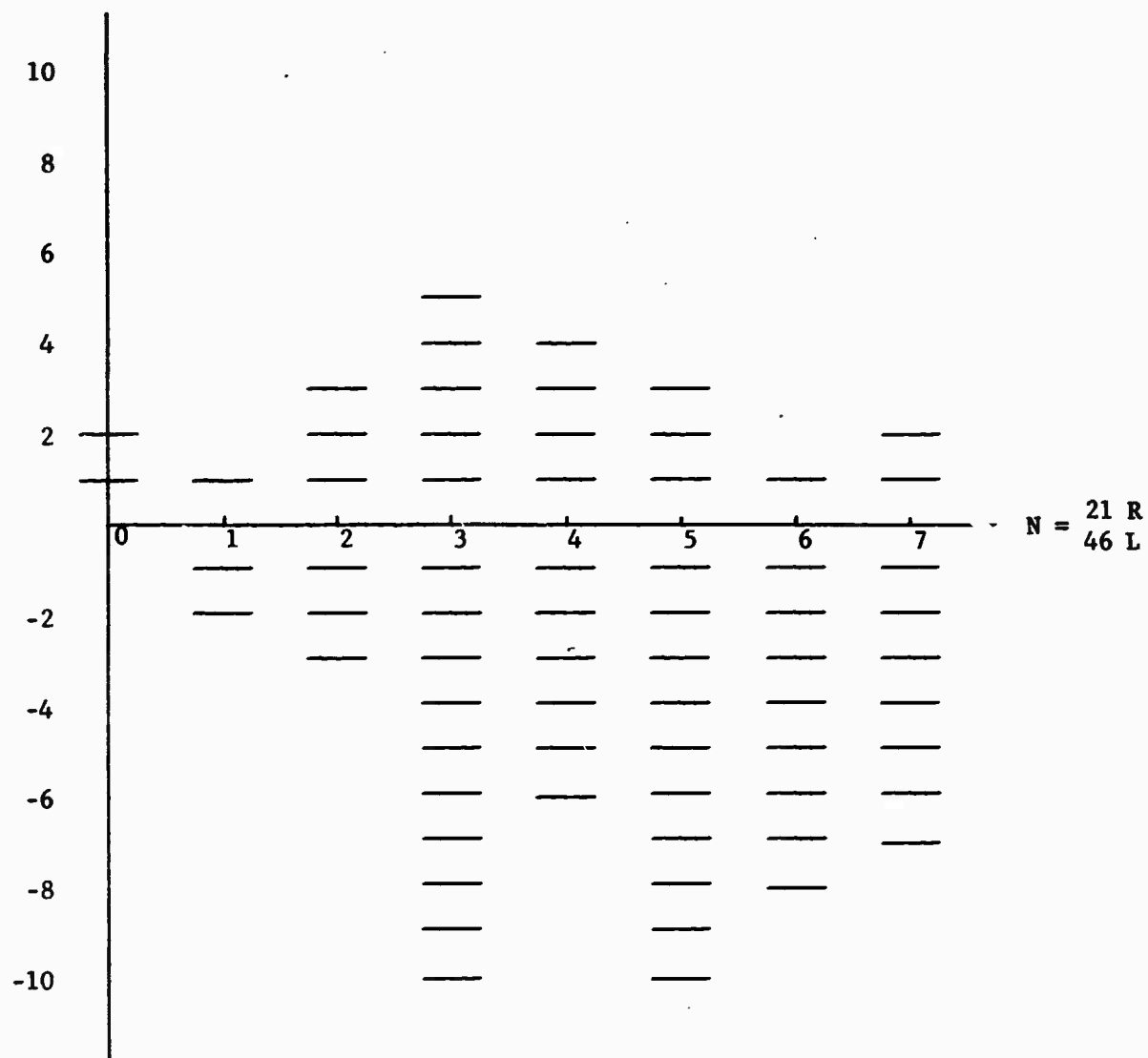


Figure 2

## Deviation Scores for 5/5 Group

(Computed as absolute deviations of post scores  
from 0 on 15 point attitude scale)



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## The Joint Effects of Inoculation and Distraction on Attitude Change<sup>1</sup>

Matilda B. Paisley and Donald F. Roberts

Clarification of factors influencing resistance to attitude change has been the focus of many research studies. Two examples are McGuire's (1964) inoculation experiments and Festinger and Maccoby's (1964) distraction experiments that specify ways in which resistance to persuasion takes place. The present study examines the combined effectiveness of inoculation and distraction in inducing resistance to persuasive messages.

McGuire's theory is based on an analogy to biology. He found that a person can be made resistant to an attacking message much in the same way that a person is made resistant to an attacking virus. Pre-exposure to a weakened form of the attacking element (be it message or virus) enables the person to stimulate his defenses so that later exposure to more extreme forms of the element can be combated. In McGuire's experiments inoculation took the form of a written message given to students under the guise of a reading and writing skills test. The experiment had two parts. In the first part, the student was either given or made to give arguments that refuted a persuasive statement which countered the student's own belief. The messages all dealt with health issues such as "It is important to brush one's teeth after every meal, if at all possible."

In the second part of the experiment, the student read a persuasive message that attacked his position. The results across a variety of specifying conditions indicated that students who were

made aware of counterarguments to the persuasive message, were less persuaded. McGuire's conclusion was that the counterarguments used to forearm students were then used by them to resist subsequent attack.

Festinger and Maccoby, relying on evidence of effects of forewarning (Allyn and Festinger, 1961) also hypothesized that counterarguing explains how individuals effectively resist persuasion. They reasoned that the listener is not passive, but is mentally active. This activity manifests itself in subvocal counterarguing. The experiments indicated that distraction (operationally defined as watching a highly amusing film while listening to a speaker advocate a position contrary to one's own) inhibited one's ability to counterargue against the message. The results showed that the students who were initially strongly opposed to the message in the distracted condition were more persuaded than those in the non-distracted condition (operationally defined as viewing a film of a speaker advocating a position contrary to one's own).

Recently Osterhouse and Brock (1970) have specified conditions that produced the distraction-acceptance relationship. These conditions are:

1. The message condition: Two kinds of messages yield successful ults: those that negate strongly held positions and those that propose actions which have negative consequences for the listener.
2. The distraction condition: A distractor must be used which

effectively inhibits counterarguing. One specific suggestion is a task which requires vocal activity. Their evidence indicates that under some circumstances vocal distraction may be more effective than visual or manual distraction.

3. The learning condition: Complete learning of content across experimental conditions must occur. The message content must be learned by both the distracted and the non-distracted groups. If the non-distracted group learns more and is persuaded more, then superior learning of the arguments in the message, rather than distraction- ptance, could well account for the results.
4. The administration condition: Single person administrations inhibit the likelihood of group support for the subject's existing attitude. In other words, subjects in a group-administered experiment often have verbal or non-verbal cues of support from fellow subjects that may help them to resist the persuasive message.

Given the results and conclusions of both inoculation research (cf. McGuire, 1964) and distraction research (cf. Festinger & Maccoby, 1964; Osterhouse and Brock, 1970), it was reasoned that combining the two treatments would enable closer examination of how manipulation of conditions assumed to influence counterarguing behavior, and thereby resistance to persuasion, actually functioned. In addition to permitting examination of whether there is a relationship between inoculation and counterargumentation and between distraction and counterargumentation (via collection of counter-



arguments generated by subjects), we were also interested in determining whether the inoculation effect would be obtained using a spoken as opposed to a written message (a question which has not been dealt with in prior research).

This experiment was an attempt to discover whether inoculation would increase counterargumentation and resistance to persuasion and whether distraction would decrease counterargumentation and resistance to persuasion or whether such a decrease would occur only under such limited conditions as high involvement or commitment.

#### Method

A 2 X 2 factorial design, crossing distraction (high and low) and inoculation (inoculated vs. non-inoculated) was employed with two replications, each using a different issue. The experiment required two sessions, the first to administer the inoculation treatment and the second to present the persuasive message and obtain measures of resistance to persuasion, counterarguing, and so forth.

Subjects were junior college students attending local schools. Two hundred forty-three students participated in session two and provided data for the "pre-analysis" described below. Of these, 188 students had also participated in session one. These 188 provided the data for the "mid-analysis" and "post-analysis" described below.

During the inoculation session, subjects were asked to read and underline important sentences in three, single-page messages. They were told the data from this exercise would be used to construct a

new reading comprehension test. For half the subjects, one of these messages comprised an inoculation message (cf. McGuire, 1964). The remaining subjects read irrelevant messages.

Three to five days later students saw a film advocating either establishing tuition for public schools or arguing against the practice of toothbrushing after every meal (both issues which pre-testing had indicated approached the status of cultural truisms and both of which were counter to most students' beliefs). The audio portion of the film carried the persuasive message and was the same for all students. For half the inoculated and half the non-inoculated subjects, the film visuals reinforced and emphasized the content of the message (non-distracted group). The remaining subjects saw a film with the same audio but which contained non-related visuals, a silent, comic film entitled A Chairy Tale (distracted group). Following the film, subjects completed a four part questionnaire.

Messages. McGuire found in pre-testing his college population that 'cultural truisms' existed in the area of health beliefs. He defined cultural truisms as "beliefs that are so widely shared within the person's social milieu that he would not have heard them attacked, and indeed, would doubt that an attack were possible." This type of belief is useful when the researcher would like control over the number of counterarguments available to the subject. Cultural truisms were important to this experiment not only because we were hoping to replicate McGuire's findings, using spoken rather than written messages, but also because we wanted to assess the use of counterarguments.

A pre-test among our college students showed that McGuire's truism, "It's a good idea to brush your teeth after every meal, if at all possible" could still be regarded as a truism. (Mean=4.5 on a -7 to +7 scale.) A second statement which seemed to be widely supported by the students was, "Public high school education should continue to be free of tuition costs to students and their parents." (Mean=5.4 on a -7 to +7 scale.) A film for each truism was produced. This allowed us to replicate the design across two content areas.

The Questionnaire. The questionnaire for each film was divided into four parts. Section A was an eight item opinionnaire. Section B provided space for listing of thoughts about the film. The students were encouraged to write statements supporting the message, statements opposing the message, or any statement indicating their thoughts during the film. Important here is that students were not forced to list counterarguments. This was an attempt to get at what was going on in their minds as they heard the message. Section C was a seven item knowledge test. Section D contained six items about the persuasiveness of the speaker and the effectiveness of the distraction. The specific nature of these items is indicated in Tables 1, 2, and 3.

The counterargument section was scored for position taken (In Favor, Opposed, Ambivalent), logicalness of arguments (Quite Logical, Not Particularly Logical), and strength of feeling (Strong Feeling, Not Particularly Strong Feeling). These were then combined to form two five-point scales.<sup>2</sup>

Data Analysis. The discussion of data analysis is divided into three stages -- pre-analysis, mid-analysis, and post-analysis. Certain strategies and certain analysis models seem more appropriate at one stage than at another.

Pre-analysis. Each of the attitude sections of the questionnaire was based on the assumption that a single dimension of the attitude was being measured. To test empirically for single-factoredness, the scales were factor analyzed. The principal components solution provided the needed check. If the first factor represents at least 50% of the total variance accounted for, then the assumption is made that items are single-factored. All items with loading of .50 or more were combined into an index.

Mid-analysis. During the second stage, the analysis of variance model is appropriate. The main effects of distraction and inoculation as well as interactions can be tested. Each previously constructed index was used as the set of scores for the analyses.

Post-analysis. After main effects and interactions were determined, we were still interested in correlations among the variables, and in specification of relationships. Both of these strategies helped us to better understand the result that the mid-analysis stage produced.

### Results

Pre-analysis. The eight, attitude-toward-toothbrushing items were factor analyzed. Results of this analysis are presented in Table 1. The general factor of the principal components solution accounted for

92% of the total variance. Two items had loadings below the .50 criterion and were eliminated. (See Table 1 for item means, standard deviations, factor loadings, and communalities.) The remaining six items had good communalities and strong loadings. Since standard deviations were not similar, z scores of the items were additively combined.

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Insert Table 1 about here  
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The general factor of the attitude-toward-tuition items, shown in Table 2, accounted for 75% of the total variance. Since single-factorhood again adequately accounts for the interrelationships of the items, z scores of the five items with .50 or greater loadings were combined into an additive index.

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Insert Table 2 about here  
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The six items designed to measure the persuasiveness of the speaker and the effectiveness of the distraction manipulation were also factored. They are presented in Table 3. The a priori expectation was a multi-factored solution, since some of the items were directed toward the effectiveness of the film distractor and some were directed toward speaker-persuasiveness. On the basis of low loadings on the general factor, two items were eliminated. The rotated solution then shows a two-factor structure for the four remaining items. Two items load strongly on each factor. Z scores of the items were added into a distraction index and a persuasiveness index.

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Insert Table 3 about here  
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Each student was also given a total knowledge score based on the number of correct answers to the seven item knowledge test. To ensure comparability with other scales, z scores of the seven items were added.

Mid-analysis. For each of the two issues, mean scores on each of the six different measures derived from the pre-analysis were computed. These measures were: Persuasion, Counterargument-logic, Counterargument-intensity, Knowledge, Distraction, and Speaker-persuasiveness. Mean scores for subjects who heard and responded to the toothbrushing message are presented in Table 4.

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Insert Table 4 about here  
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Looking first at Persuasion scores, analysis of variance revealed a main effect for inoculation ( $F=7.71$ ;  $df=1,84$ ;  $p<.01$ ). Subjects who experienced the inoculation treatment prior to message exposure were significantly more resistant to persuasion than were their non-inoculated counterparts. Neither the distraction nor the interaction effect approached significance. It is interesting to note, however, that contrary to our hypothesis, distracted subjects showed a tendency to be slightly more resistant to persuasion than non-distracted subjects.

Variance analyses showed no effect of distraction or inoculation on either counterarguing score. All subjects produced counters which

were similar in both logicalness and intensity. There were, however, main effects of distraction and of inoculation when both Distraction scores and Knowledge scores were submitted to analysis of variance.

As indicated by the means in Table 4, the distraction manipulation was highly successful, distracted subjects reporting much more distraction than did non-distracted subjects ( $F=83.64$ ;  $df=1,84$ ;  $p<.001$ ). There was also a somewhat unexpected effect for the inoculation manipulation ( $F=5.58$ ;  $df=1,84$ ;  $p<.05$ ), with inoculated subjects reporting more distraction than did non-inoculated subjects. Mean scores indicate that distracted subjects who had been inoculated were more distracted than those who had not been inoculated. Similarly, among subjects who saw the non-distracting film, subjects who had been inoculated reported more distraction.

Analysis of variance of Knowledge scores revealed a similar pattern. As measured by our items, distracted subjects learned significantly less of the message ( $F=17.22$ ;  $df=1,84$ ;  $p<.001$ ) and inoculated subjects learned significantly less of the message ( $F=4.23$ ;  $df=1,84$ ;  $p<.05$ ). As will be discussed more fully later, the results for both persuasion scores and knowledge scores are probably largely explained by the very powerful distraction effect. That is, the distraction manipulation appears to have been so strong that it resulted in message reception loss for distracted subjects. This may well have precluded any chance of testing the distraction hypothesis as first proposed by Festinger and Maccoby (1964).

Finally, analysis of variance of Speaker-persuasiveness scores revealed a main effect of distraction ( $F=10.51$ ;  $df=1,84$ ;  $p<.01$ ), a main

effect of inoculation ( $F=12.18$ ;  $df=1,84$ ;  $p<.001$ ), and an interaction between distraction and inoculation ( $F=5.25$ ;  $df=1,84$ ;  $p<.05$ ).

Examination of the means presented in Table 4 indicates that distracted subjects rejected the speaker more than did non-distracted subjects and that inoculated subjects rejected the speaker more than did non-inoculated subjects. Finally, the interaction between distraction and inoculation was due primarily to the much greater acceptance of the speaker manifested by non-distracted/non-inoculated subjects, the only group to perceive the speaker in a positive light.

Precisely the same series of analyses was computed for scores given by subjects who heard the message advocating charging tuition for public school education. Mean scores by experimental conditions for this issue are presented in Table 5.

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Insert Table 5 about here  
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As with the toothbrushing issue, analysis of variance of Persuasion scores on the tuition issue manifested a single main effect of inoculation ( $F=9.22$ ;  $df=1,96$ ;  $p<.05$ ), inoculated subjects showing more resistance to persuasion.

Again as with the toothbrushing issue, there were no significant effects when Counterargument-logic scores were submitted to analysis of variance. Unlike the toothbrushing issue, however, analysis of Counterargument-intensity scores revealed that distracted subjects were more intensely opposed to the message than were non-distracted subjects ( $F=6.58$ ;  $df=1,96$ ;  $p<.05$ ), a result directly counter to that which was expected.



With the tuition issue, as with the toothbrushing issue, subjects who participated in the distracted conditions reported being very much more distracted than those who served in the non-distracted conditions ( $F=147.16$ ;  $df=1,96$ ;  $p<.001$ ). And again the effect of distraction was apparent on Knowledge scores, with distracted subjects learning significantly less than did non-distracted subjects ( $F=24.03$ ;  $df=1,96$ ;  $p<.001$ ). This latter analysis also revealed a marginally significant interaction ( $F=2.85$ ;  $df=1,96$ ;  $p<.10$ ).

Although the overall pattern of means suggests that inoculated subjects learn less than non-inoculated subjects, subjects in the inoculated/non-distracted condition learned more than those in the non-inoculated/non-distracted condition. This result, combined with the much lower Knowledge scores obtained from distracted/inoculated subjects produced the tendency toward interaction.

Finally, unlike the earlier analysis, there were no effects when Speaker-persuasiveness scores were submitted to analysis of variance. Although scores in Table 5 indicate that distracted subjects found the speaker to be less persuasive than did non-distracted subjects, the difference did not approach significance.

Post-analysis. Post-analyses were conducted in order to further clarify some of the relationships revealed by analyses of variance.

It has already been noted that the failure of the distraction manipulation to affect Persuasion scores may derive from a too powerful distraction manipulation. This possibility is supported not only by the large differences in perceived distraction reported by subjects in the distracted vs. the non-distracted groups, but also

by the significantly lower Knowledge scores produced by distracted subjects. Several researchers (Festinger & Maccoby, 1964; Osterhouse & Brock, 1970) have argued that to the extent that distraction decreases learning, then any gain due to interference with counterarguing may be more than offset by message reception loss. A crucial assumption here, of course, is that learning increases persuasion, that is, that people have to learn the arguments in a message in order to be persuaded by the message. Thus, the obtained learning differential may well have masked the effect of distraction on persuasion.

If this is an adequate explanation for the failure of distraction to increase yielding in this experiment, then: a) we should expect to find a correlation between Knowledge scores and Persuasion scores; and b) given such a correlation, an analysis of covariance in which the effect of learning is removed from Persuasion scores should reveal an effect of distraction on persuasion.

Table 6 presents the correlations among Inoculation, Distraction, Knowledge scores and Persuasion scores for both issues. While there was no correlation between Knowledge scores and Persuasion scores on the tuition issue, there was a significant relationship on the toothbrushing issue ( $r=.27$ ;  $z=2.45$ ;  $p<.05$ ). Since there was no relationship with the tuition message, analysis of covariance was inappropriate. Analysis of covariance was performed on scores resulting from the toothbrushing message. However, this analysis failed to unmask an effect of distraction on Persuasion scores. For this study, at least, it appears that greater knowledge did not lead

to greater persuasion.

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Insert Table 6 about here  
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This might well be a substantial blow to the distraction hypothesis were it not for the fact that a lack of relationship between learning and persuasion -- particularly when learning is measured via multiple choice tests -- is a rather frequent finding of attitude change experiments. Indeed, the lack of such relationships has led McGuire (1969) to characterize traditional learning theories of attitude change as "acquiring the status of a fertile error" (p. 266). In short, while the covariance analysis failed to reveal a distraction effect on Persuasion scores, this failure does not disprove the distraction hypothesis, even under the relatively low involvement conditions of this experiment, because of the possible insensitivity of the Knowledge measure.

Returning again to the analysis of variance results presented in the preceding sections, the obtained differential effect of distraction on perceptions of Speaker-persuasiveness may point to another explanation of the Persuasion score results.

Table 7 illustrates a strong relationship between distraction and perceived Speaker-persuasiveness for the toothbrushing message ( $r = -.35$ ;  $z = 3.27$ ;  $p < .002$ ), and a marginal relationship for the tuition issue ( $r = -.18$ ;  $z = 1.80$ ;  $p < .10$ ). For both issues the trend was for distracted subjects to perceive the speaker to be less persuasive than did non-distracted subjects. Moreover, for the toothbrushing issue, where the relationship was strong, there was also a strong relationship

between Speaker-persuasiveness and Persuasion scores ( $r=.46$ ;  $z=4.30$ ;  $p<.001$ ), while for the tuition issue, where the relationship was weak, so was the relationship between Speaker-persuasiveness and Persuasion scores. In other words, to the extent that distraction related to lower perceived Speaker-persuasiveness, perceived Speaker-persuasiveness appears to relate to persuasion.

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 Insert Table 7 about here  
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Finally, it should be noted that correlations between Persuasion scores and both Counterargument-logic scores and Counterargument-intensity scores were computed for both issues. These coefficients indicate that when experimental conditions were disregarded, there was a strong relationship between counterarguing and yielding. That is, for the toothbrushing issue the correlation between Persuasion scores and Counterargument-logic scores was  $.28$  ( $z=2.60$ ;  $p<.01$ ); between Persuasion scores and Counterargument-intensity scores it was  $.19$  ( $z=1.14$ ;  $p<.05$ ). For the tuition issue, the correlation between Persuasion scores and Counterargument-logic scores was  $.44$  ( $z=4.40$ ;  $p<.001$ ); the correlation between Persuasion scores and Counterargument-intensity scores was  $.37$  ( $z=3.70$ ;  $p<.001$ ).

Recalling that both sets of counterarguing ranged from 5 (opposed) to 1 (in favor) and that lower Persuasion scores indicate more yielding, it is clear that there is a strong relationship between counterarguing behavior and resistance.

### Summary and Discussion

Significant effects and trends created by distraction and inoculation are summarized below.

#### DISTRACTION

<u>Significant Effects</u>	<u>Mean Trends</u>
1. Distraction made people counterargue with more intensity -- Tuition	Distraction made people counterargue with more intensity -- Toothbrushing
2. Distraction meant less knowledge -- Tuition and Toothbrushing	
3. Distraction made it difficult to concentrate on the film content -- Tuition and Toothbrushing	
4. Distraction made people perceive the speaker as not persuasive -- Toothbrushing	Distraction made people perceive the speaker as not persuasive -- Tuition

#### INOCULATION

1. Inoculation made people less persuasible -- Tuition and Toothbrushing	
2. Inoculation meant less knowledge -- Toothbrushing	Inoculation meant less knowledge -- Tuition
3. Inoculation made it difficult to concentrate on the film content -- Toothbrushing	
4. Inoculation made people perceive the speaker as not persuasive -- Toothbrushing	Inoculation made people perceive the speaker as not persuasive -- Tuition

#### INTERESTING INTERACTIONS

1. Distraction and inoculation meant the least learning -- Tuition	Distraction and inoculation meant the least learning -- Toothbrushing
2. Distraction and inoculation made people perceive the speaker as least persuasive -- Toothbrushing	Distraction and inoculation made people perceive the speaker as least persuasive -- Tuition

On the basis of these findings, and the correlations obtained in the post-analysis, several tentative conclusions may be drawn.

It is clear that an inoculation treatment increases resistance to persuasion even when subjects respond to an audio-visual rather than a written message. What is somewhat surprising however, is the lack of relationship between the inoculation treatment and counterarguing scores. Most prior research on inoculation theory (cf. McGuire, 1964) rests on the assumption that inoculation mediates resistance because subjects employ the counterarguments obtained during the pre-message treatment. Although we found an overall relationship between counterarguing scores and resistance, we did not find the expected effect located by inoculation. Resistance was there, but counterarguing as indicated by our measures was not.

Two other findings relative to the inoculation manipulation may help partially to explain our results. On the toothbrushing issue, inoculation led to significantly lower perceptions of Speaker-persuasiveness and significantly lower Knowledge scores; on the tuition issue, the differences did not reach significance but the mean trends were in the same direction. One possibility indicated by these data is that the inoculation procedure so committed subjects to a position counter to the one advocated by the messages that they a) paid less attention to the message; b) engaged in more source derogation simply because the source was advocating a position they found untenable. That is, either the need to counterargue or the opportunity to counterargue may never have occurred.

Although our data do not allow a causal test of either

explanation, the fact that inoculation did not mediate differences in counterarguing scores, but did mediate differences on these two variables, indicates that further research should be done in this area.

Turning to the effects of the distraction manipulation, it is clear that the relationship between distraction, learning, and persuasion is complex. It appears that our distraction manipulation was too powerful to provide a legitimate test of the distraction hypothesis in that it strongly mediated against the learning which is a necessary pre-condition for the distraction effect to obtain. Indeed, it may have been so powerful that it not only decreased learning, but it also increased frustration to the point that reactivity was increased.

Since subjects were generally so near the end of the persuasion scales to begin with, such reactivity could not manifest itself in a "boomerang effect." There was no room to move away from the originally held position. However, the significant increase in both source derogation and counterarguing manifested by distracted subjects on the toothbrushing issue (and the means in that direction on the tuition issue) could well be the result of a "fight back at any cost" response on the part of subjects placed in a highly frustrating situation. And as scores on the measures of distraction indicate, attempting to attend to the message while viewing the particular visuals used in the study could well have been highly frustrating. If such a frustration explanation has any validity, then the only place subjects could manifest their reactions was on

the counterarguing and Speaker-persuasiveness measures, as was found.

A final point about the effect of distraction on perceptions of Speaker-persuasiveness is also worth noting. Because of the substitution of unrelated visuals in the distraction versions of both films, subjects in the distracted conditions saw very little of the speaker (only a brief, opening, "head" shot). Since a number of independent observers commented on the forcefulness of the speaker in the non-distraction version of the films, the effects located by distraction could be interpreted as straightforward source credibility effects. Subjects who were able to attend to the speaker simply may have been overpowered by him.

Clearly, then, several of the results of combining the basic manipulations of inoculation and of distraction research were unexpected. Some of this may have been due to the "engineering" of the experiment, but some of it must also be attributed to the complexity of the relationships among the variables under investigation.



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Footnotes

1. This research was conducted under a contract from the office of Naval Research, No. N00014-67-A-0112-0032 entitled "Some Basic Processes in Persuasion."
2. The Counterargument-logic score ranged from 5 (opposed to the speaker's position, quite logical arguments) to 1 (in favor of the speaker's position, quite logical arguments). The Counterargument-intensity score ranged from 5 (opposed to the speaker's position, strong feeling) to 1 (in favor of the speaker's position, strong feeling).

**TABLE 1 Mean, Standard Deviations, Factor Loadings, and Communalities of the Eight Attitude-toward-toothbrushing Items. \***

ATTITUDE ITEM	$\bar{X}$	Standard Deviation	Factor Loading	Communality
1. How important is it to brush your teeth after every meal?	-.89	4.86	.68	.53
2. How effective is regular toothbrushing in preventing tooth decay?	-.29	5.13	.72	.53
3. Regular toothbrushing is likely to damage gums.	1.48	5.06	.76	.59
4. It's a good idea to brush your teeth after every meal, if at all possible.	1.19	5.76	.84	.72
5. Regular toothbrushing can improve the appearance of teeth but cannot prevent tooth decay.	-.36	5.33	.72	.59
6. Diseases of the gums and jaw are prevented by brushing three times a day.	-2.25	4.62	.47	.31
7. How effective is regular toothbrushing in preventing mouth odors?	.50	4.29	.39	.22
8. Effective control of tooth decay has nothing to do with toothbrushing.	.86	5.17	.75	.57

\* This analysis was based on responses from 122 subjects who responded to the "toothbrushing" questionnaire during session two. Some of these were not present during session one.

**TABLE 2 Means, Standard Deviations, Factor Loadings, and Communalities of the Eight Attitude-toward-tuition Items. \***

<b>ATTITUDE ITEM</b>	<b><math>\bar{X}</math></b>	<b>Standard Deviation</b>	<b>Factor Loading</b>	<b>Communality</b>
1. How important is it to maintain a system of free high school education?	2.83	4.65	.56	.43
2. How effective is the present high school system in meeting the educational needs of today's youth?	-.09	3.75	.46	.36
3. Public high school education should continue to be free of tuition costs to students and their parents.	4.02	3.96	.73	.62
4. School costs should be paid by those who have children.	-.73	4.72	.27	.20
5. Widespread ignorance is prevented by the present system of tuition free high schools.	.38	4.58	.43	.22
6. How effective are high schools, as we know them today, in preparing students for post high school years?	.28	4.04	.51	.43
7. The free high school system limits the learning ability of pupils.	2.31	4.50	.51	.30
8. A free high school education continues to be the best way to educate today's youth.	2.48	3.98	.69	.50

\* This analysis was based on responses from 121 subjects who responded to the "tuition" questionnaire during session two. Some of these were not present during session one.

**TABLE 3 Means, Standard Deviations, Unrotated and Rotated Factor Loadings, and Communalities of the Six Film Presentation and Speaker-persuasiveness Items (N=243).**

<b>ATTITUDE ITEM</b>	<b><math>\bar{X}</math></b>	<b>Standard Deviation</b>	<b>Unrotated Factor Loading</b>	<b>Rotated Factor Loading</b>	<b>Communality</b>
1. How interesting was the film?	.25	4.29	.43	--	.24
2. How easy was it to follow the points that the speaker was making?	1.76	4.66	.58	.74*	.55
3. Did the visual presentation help or hinder your understanding of the speaker's points?	-1.16	4.53	.62	.73*	.56
4. How persuasive was the speaker?	-.83	4.42	.66	.62**	.49
5. How believable did the speaker make the message?	.42	4.50	.54	.64**	.43
6. How qualified was the speaker to discuss this topic?	.83	3.36	.27	--	.17

\*Loading on Factor I.

\*\*Loading on Factor II.

**TABLE 4 Mean Scores by Experimental Condition Obtained on Six Measures Using the "Toothbrushing" Issue. \***

Dependent Variable	Inoculated		Not-Inoculated	
	Distracted	Not Distracted	Distracted	Not Distracted
N =	22	22	22	22
Attitude Score	1.86	1.05	-.45	-2.21
Counterargument-logic Score	4.23	4.23	4.14	3.68
Counterargument-intensity Score	3.77	3.59	4.00	3.73
Knowledge Score	-1.66	1.02	-.28	2.20
Distraction Score	1.32	-1.17	.72	-1.88
Speaker-persuasiveness Score	-.77	-.44	-.35	1.58

\* All scores have been transformed to z scores. Higher scores indicate "more" resistance to persuasion, more logical counterarguments, more intense counterarguments, more knowledge, more distraction, more speaker-persuasiveness.

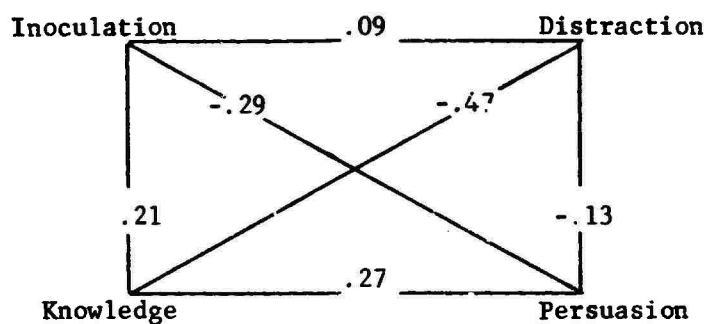
TABLE 5 Mean Scores by Experimental Condition Obtained on Six Measures Using the "Tuition" Film. \*

Dependent Variable	Inoculated		Not-Inoculated	
	Distracted	Not Distracted	Distracted	Not Distracted
N =	25	25	25	25
Persuasion score	.84	1.35	-.84	-1.04
Counterargument-logic score	4.16	4.28	4.20	4.04
Counterargument-intensity score	4.08	3.68	4.08	3.48
Knowledge score	-2.28	1.80	-.59	1.40
Distraction score	1.52	-1.45	1.42	-.94
Speaker-persuasiveness score	-.51	.04	-.25	.17

\* All scores have been transformed to z scores. Higher scores indicate "more" resistance to persuasion, more logical counterarguments, more intense counterarguments, more knowledge, more distraction, more speaker-persuasiveness.

Table 6 Correlations Among Inoculation, Distraction, Knowledge, and Attitude, Toothbrushing and Tuition Films.

TOOTHBRUSHING



TUITION

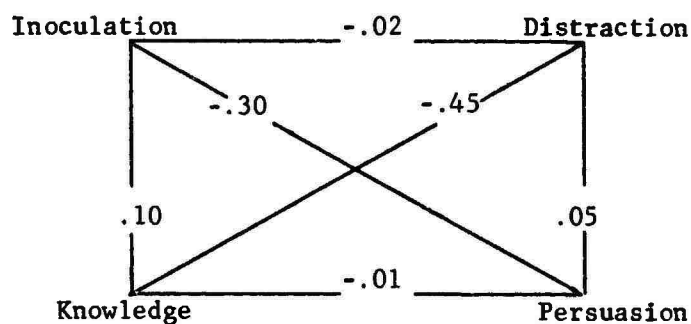
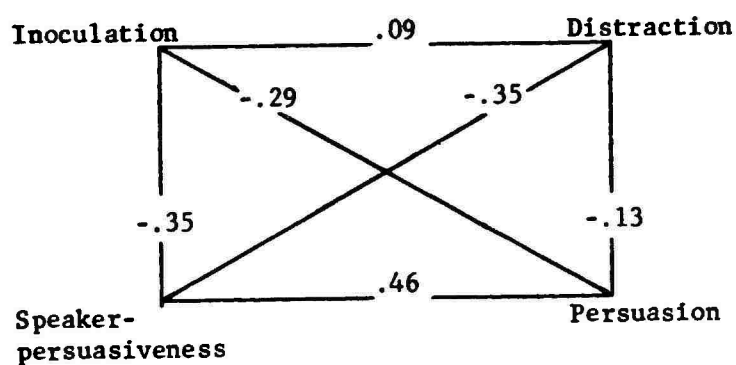


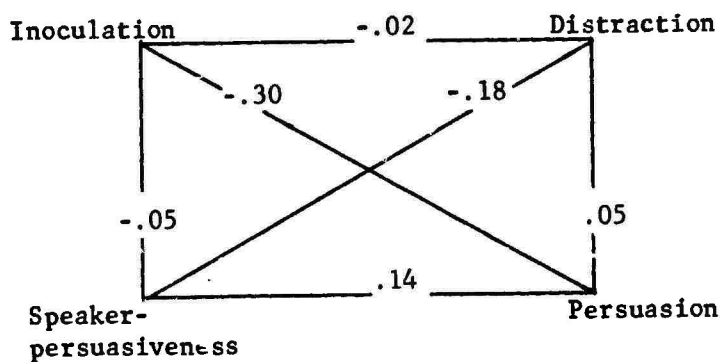


Table 7 Correlations Among Inoculation, Distraction, Speaker-persuasiveness, and Attitude, Toothbrushing and Tuition Films.

## TOOTHBRUSHING



## TUITION



APPENDIX

COGNITIVE PROCESSES IN PERSUASION

by

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October 1971

Paper delivered at the Fourth Attitude Research Conference  
of The American Marketing Association, St. Thomas, Virgin Islands,  
November, 1971. Subsequently published in R.I. Haley (Ed.),  
Attitude Research in Transition, Chicago:  
American Marketing Association, 1972

This research was conducted under a contract from  
the Office of Naval Research No. N00014-67-A-0112-0032  
entitled "Some Basic Processes in Persuasion."

## Cognitive Processes in Persuasion

Nathan Maccoby and Donald F. Roberts

Although there were sporadic forays into the field of attitude change earlier, World War II really marks the beginning of systematic and continuous research on this topic. During that war, the late Carl Hovland recruited a small team of psychologists into the Research Branch of the Information and Education Division of the War Department, and initiated a series of experiments in persuasion. These are reported in what is still a basic volume entitled "Experiments on Mass Communications" by Hovland, Lumsdaine, and Sheffield (1949). After the war Hovland took some of his colleagues back with him to Yale, where he established a systematic and continuing program in communication research with heavy stress on attitude change. A large and systematic body of research was accumulated by Hovland and his colleagues and by many other social psychologists and communication researchers who followed. (See, for example, Insko, 1967; McGuire, 1969.)

While this work manifests some early speculation on the nature of the process of persuasion as it occurs within the receiver, the research was pretty much confined to studying the relationship between inputs and outcomes. That is, it has looked at what kinds of communications presented under what kinds of conditions by what kinds of communicators resulted in what kinds of changes in the receiver of the communication.

Essentially a learning theory approach to attitude change was employed which resulted in a great deal of information about factors influencing persuasion as a glance at any recent social psychology text will testify. However, it has paid relatively little attention to the cognitive processes occurring within a receiver as he processes a persuasive communication.

More recently the emphasis in the field has focused on a variety of approaches to attitude change which Maccoby and Maccoby (1961) categorized under the heading of "homeostatic" and which have more recently been labelled "consistency" theories. Indeed, beginning with Heider (1946) and continuing with Newcomb (1953), Osgood and Tannenbaum (1955), Festinger and his students (1957, 1964) and others too numerous to mention, consistency theory has been a prolific source of hypotheses for experiments in attitude change. Again we refer you to any recent social psychology text. The principal point of attack of these consistency theories, particularly of dissonance theory, has been on the motivational components of the persuasive process. They focus on what it is that motivates a person to change his attitude.

Consistency theories still, however, leave us with the question of why some persuasive communications are effective while others frequently fail to persuade even under conditions of generally high motivation. True, dissonance theory does point out that there are means other than changing one's attitude to reduce dissonance, and applied in this way it has contributed brilliantly to explaining some apparent anomalies in experimental findings.

But even when dissonance leads to attitude change as the means of reduction of dissonance, the specific attitude that is changed cannot be specified before the fact. Moreover, consistency theory approaches still have not told us much about how individuals cognitively process a persuasive message or how such processing might be related to attitude change. And finally, it seems to us that the consistency theory approach has simply ignored learning factors in attitude change.

As that last statement implies, our own particular bias is in the direction of learning theory, but modified in a special way, and it is out of a learning theory model that the present theoretical formulation most closely derives. We are interested in some questions which have begun to receive research consideration only within the last few years, questions about what goes on inside the human when he is confronted with a persuasive communication. If attitudes do or do not change, what is the nature of the change process? What goes on cognitively when persons are subjected to communications designed to get them to change their attitudes?

The present research grew out of some earlier work on the persuasion process in which the senior author engaged a number of years ago. In 1961, Allyn and Festinger investigated forewarning's role in persuasion by warning half of a group of high school seniors that they were going to hear a communication advocating that teenagers not be permitted to drive automobiles (a very ego-involving topic for high school students) while telling the other half of the students that they were going to hear a speech by an "expert"

(no mention of the topic was made) and that they should pay attention to what kind of a person he was because they would be asked questions about his personality after the speech. The results were as predicted: the speech advocating teenagers should not drive was more likely to be accepted by students who were instructed to pay attention to the speaker's personality than by students warned of the speaker's intent. Allyn and Festinger reasoned that the forewarning provided students with motivation (via dissonance) and opportunity (time between warning and speech) to marshal their defenses, thus making them more resistant to the communication.

The nature of what went on in the minds of the students as a result of the forewarning, however, was still not clear. Maccoby and Festinger felt that the forewarning which took place almost immediately prior to the speech could not possibly have provided forewarned students with that much more opportunity to think about what they might say in reply; particularly since the first words out of the communicator's mouth attacked teenage drivers and should have served to warn the "personality-oriented" group. They did feel, however, that the personality instruction could have served to interfere with any counter-arguing process that might have occurred during reception of the persuasive message. That is, the obtained results might not have been due so much to the forewarning as to the fact that forewarned students also had the opportunity to argue covertly with the speaker as he spoke, while personality-oriented students were distracted from such behavior.

The experiment designed to test this hypothesis was subsequently reported under the title of "On Resistance to Persuasive Communication" (Festinger and Maccoby, 1964).

Briefly, two versions of a persuasive communication advocating abolition of college fraternities were prepared as 16 mm., sound, motion pictures. Both versions had identical sound tracks, but except for the openings, the visuals differed. The "straight" version showed a professor giving a talk advocating the abolition of fraternities and visuals congruent with the message. The distraction version started off in the same way, but then cut to an edited visual portion of a humorous film called "The Day of the Painter." Meanwhile the speech continued exactly as in the straight version. Thus, the visuals were incongruent with and distracted attention from the verbal message. Subjects in the study included both fraternity men and independents.

As predicted, among fraternity members the "Painter" or distracting version was more persuasive than the straight version. This was not the case among non-fraternity members, who manifested slightly the opposite results. Our best explanation for the results is that fraternity members, who were highly involved and felt strongly about the issue of maintaining fraternities on college campuses, were prepared with arguments with which to counter the persuasive communication. However, distraction from the message by a film such as "The Day of the Painter" interfered with such counterarguing by dividing or redirecting their attention. The result was that the communication had more persuasive effect on them.



To put it another way, distraction from counterarguing increased the persuasiveness of the communication because it lowered the defenses. Available counterarguments were brought to bear, if at all, only rarely. Among non-fraternity men the lack of a difference between distracted and non-distracted Subjects might have been due to the fact that they already agreed with the position being advocated, or because they were uninvolved and produced no counters which could be interfered with, or both.

More recently a number of investigators have replicated this experiment using a variety of persuasive issues, subject populations, and distractors (Freedman and Sears, 1965; Breitrose, 1966; Gardner, 1966; Rosenblatt, 1966; Dorris, 1967; Kiesler and Mathog, 1968; Haaland and Venkatesan, 1968; Vohs and Garrett, 1968; Osterhouse and Brock, 1970). While the results are somewhat mixed, a review we have just completed indicates that when the persuasive issue is involving to the subjects and when the distractor is engineered such that it does not interfere with learning the content of the message but does distract, then the results are substantially as reported by Festinger and Maccoby (1964). That is, distraction leads to increased persuasion, and we infer that the mechanism is via interference with counterarguing.

The key word, of course, is "infer." Only one of the foregoing studies attempted to directly measure counterarguing and their measure was taken after reception of the persuasive message. We'll go into the measurement problems a bit more fully in a moment.

Following the initial distraction research, the senior author of this paper began thinking more about the nature of the attitude change process as it occurs within the human receiver. Since one never seems to fully escape the sins of his youth, it occurred to him that perhaps a neo-Guthrie approach to attitude change might be worth exploring and might account for the distraction findings. This formulation was first presented by Maccoby at a Gould House seminar sponsored by the Foundation for Research on Human Behavior in 1964. Briefly, the approach posits that quite possibly the reception of a communication in whatever form (hearing a message, seeing it, or whatever), understanding it, and being persuaded by it all take place immediately and simultaneously. In other words, the immediate intake of a persuasive message might lead to immediate persuasion. Now, following a modified contiguity learning theory, this persuasion can easily and readily be supplanted by subsequent counter-persuasion -- including self-generated counter-persuasion. If, for example, one is presented with a message absolutely counter to what one holds near and dear, the contention is that there simultaneously occurs perception of the message, immediate understanding of the message, and, for the nonce, persuasion by that message. However, almost immediately afterwards, one can say to oneself, "This is a lot of nonsense because . . ." and think up or rehearse counterarguments of various sorts either by denigrating the source or by attacking the content of the argument. Thus the

initial, immediate persuasion is nullified by an even more recent message, albeit one which is self-generated. Of course, we do not mean to argue that only the most recent stimulus (e.g., single most recent counterargument) will determine the response. A persuasive proposition, like any other, may be built up and supported by a number of related propositions. However, we would contend that the configuration of all comments, counter or supportive, which a receiver thinks up and/or rehearses during reception will exert strong influence on the final response.

The results of the various distraction experiments would certainly be consistent with this formulation. To the extent that the persuasive message attacks a position which is ego-involving to the receiver, he is motivated to produce counterarguments, thus nullifying the initial persuasion. This appears to have been the case with non-distracted fraternity men. Their distracted counterparts, on the other hand, were hindered from rehearsing such counters, hence the initial impact of the persuasive message remained more or less in effect. (At this point it is well to reemphasize that demonstration of the distraction effect is critically dependent on the engineering of the distraction. As the contiguity model implies, the distractor must not be so strong as to interfere with understanding or learning of the persuasive message, but it must be strong enough to interfere with production of counters. In other words, the model assumes understanding or learning of what the message says at the moment of reception, otherwise the model does not apply).

If we turn to the non-fraternity men, the lack of a distraction effect among them is also explained by our formulation. To the extent that the persuasive message did not attack an issue dear to them, they were probably not at all motivated to counter-argue, thus they accepted the argument of the message.

The problem we are left with, of course, is that although the results of the various distraction experiments can be accounted for by such a neo-Guthrian formulation, they in no way represent a test of it. The next step, clearly, was to get at the nature of the counterargument process itself. That is, we could not depend on whether or not counterarguing was likely to take place on the basis of manipulations of external variables. Rather, the task was to measure whether or not it took place and, hopefully, to manipulate the way in which it took place. We had to replace inferences about counterarguing with observations of counterarguing.

We must admit that in our more Walter Mitty-esque moments we dreamed of designing the critical experiment which would provide a complete test of the model and all its ramifications. However, since experience in behavioral science research tends to correlate highly with humility, and since our combined experience amounts to quite a few years (albeit a somewhat skewed distribution), we settled for a less ambitious start.

The major problem, as we saw it, was to develop a method for discovering any counterarguments produced during the reception of a persuasive message. In the past several years there have been

studies which have obtained subjects' "thoughts or comments" about a persuasive message either prior to reception (e.g., Barron and Miller, 1969; Brock, 1969) or after reception (e.g., Osterhouse and Brock, 1970; Greenwald, 1968), and have then analyzed these listed comments for counterarguments and have related these counters to attitude scores. For our purposes, however, the two approaches manifested several weaknesses. Anticipatory counterarguing tells us little about response to a persuasive message. While it may provide information about what kinds of counterarguments a person might have available on a given issue, it does not indicate whether or how a receiver might actually use such counters. Similarly, while collection of post-message comments may give us some idea of the kinds of counterarguments a receiver might have used, such an approach may also simply be telling us that this is how a receiver rationalizes his position after the fact. In short, there seems to be no substitute for obtaining counters being used at the time of message reception.

The listing procedure -- having subjects write down their thoughts and comments about a persuasive message -- seemed to be the best available method for getting close to what goes on in a receiver's head during reception. While the writing process is obviously at least a step removed from thought processes per se, given the present state of technology it is the best technique we have. Thus our first decision was that we would obtain subjects' thoughts by having them write them at the time the message was being received.

Our next step was to design a study which would enable us to obtain subjects' comments during reception and which would provide us a means for validating those comments both by comparisons among counterargument output obtained under a number of conditions (which, hypothetically, would affect counterarguing behavior), and by correlating counterarguments with attitude scores. We settled on a 2 x 2 x 2 factorial design in which we manipulated motivation to counterargue, opportunity to counterargue, and when counterarguments were obtained.

On the basis of pilot testing we selected an issue and a position on the issue which was not too ego-involving, but with which most subjects (junior college students) disagreed and about which they were capable of generating a wide range of counterarguments. The argument of the message, which also served as our attitude dependent variable, was:

Persuasive attempts, such as editorials, columns, and news commentary, are dangerous and misleading and should be abolished from our press system.

Motivation to counterargue was manipulated by having half the subjects respond to the preceding statement on a 15 point scale ranging from "strongly agree" to "strongly disagree" immediately prior to the persuasive message, while the other half of the subjects responded to an unrelated statement. There is good evidence that taking a position immediately prior to an attack on that position increases resistance and since we reason that resistance is a function of counterarguing, such comment should also affect production of counters.

All subjects heard the same persuasive message, an 8 1/2 minute tape recording of a "radio news commentary" arguing for the abolition of editorial content from the news media -- an editorial against editorials! Subjects were told that we were engaged in a study of what people think about when they listen to a news broadcast, that we were interested in their thoughts about and comments on the recording, and they would be asked to list such thoughts after the "broadcast." No mention was made of either counterarguing or of persuasion. Opportunity to counterargue and when counterarguments were obtained were manipulated by varying the conditions under which subjects listened to the tape.

Most studies which have varied opportunity to counterargue have done so by interfering with counterargument production, thereby decreasing opportunity. This is the case with the distraction experiments described earlier. Our approach was to increase opportunity to counterargue by giving subjects more time to think about and generate comments. Thus, half the subjects from both the pre-tested and the non-pre-tested groups heard the tape recording straight through, just as they would expect to listen to any broadcast (Continuous group). The other half, however, heard the tape with a 20 second pause after each major point (Stop group), a total of eleven "stops" in all. Subjects in this condition were told that the stops were to enable them time to "collect their thoughts" in order to be better prepared to list them after hearing the tape recording.

Finally, half of the subjects in each of these groups were instructed to "make mental notes," to try and remember as best they could the various thoughts that went through their heads as they listened (Think group). The other half of the subjects, however, were provided with blank scratch paper and were told that they could jot down notes on their thoughts to prepare them for the questions that were to follow (Write group). It was via these notes, of course, that we obtained counterarguments generated during message reception.

After hearing the persuasive message, all Subjects (163 summer students at a local junior college) responded to a number of attitude statements, among which was the attitude dependent variable described earlier. In addition, all subjects were asked to list their comments about the message on several lined pages provided for this purpose. Those who had participated in the "write" condition during reception were asked to place their notes on the floor under their chairs and not to refer to them as they completed this second list.

To summarize then, participants filled out a pre-message questionnaire during which half of them responded to a pre-test item directly relevant to the message. They then listened to a persuasive message under one of four conditions which enabled us to obtain written comments from half of the Subjects during message reception. Finally all Subjects responded to a post-message attitude questionnaire and all Subjects listed their comments on the message after reception. Figure 1 presents the experimental and factorial designs.



Insert Figure 1 about here

The various analyses this design enabled should be obvious from the figure. For the attitude dependent variable it provides us with change scores for half the subjects and with post scores for all the subjects. In terms of the counterarguing data, it gave us the opportunity to compare Subjects' counterarguments generated during reception with their own comments generated after reception, and to compare counters generated by one group during reception with counters generated by another group after reception. And of course, using either the attitude scores or counterargument data, we could test for the various main and interaction effects inherent in the factorial design.

The most difficult and most important task in the analysis stage was the development of a coding procedure for analyzing what turned out to be the mass of written output from which we hoped to obtain counterargument scores. The coding task demanded both qualitative and quantitative judgments. That is, comments might manifest agreement, disagreement, or neutrality toward the message. They could differ in their nature, dealing, for example, with the source of the message, or with a specific point, or with the general issue, and so forth. And finally, we felt that a key factor in evaluating any comment about the message was its intensity. For example, a receiver might say "I don't believe that." or he might say "That's a damned lie!" Intuitively the latter would seem to imply a greater likelihood of resistance. Thus, quantitative, intensity judgments had to be made.

Figure 1a  
Experimental Design

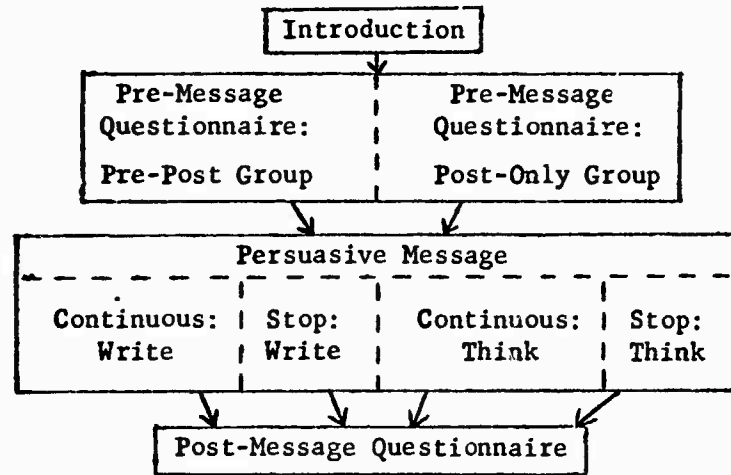


Figure 1b  
Factorial Design of the Experiment

	Pre & Post Test		Post Test Only	
	Continuous	Stop	Continuous	Stop
Think				
Write				

On the basis of several pilot studies we worked out the following procedure. Coders read each "thought" listed by a subject and first judged it to be supportive of the communicator's advocated position, counter to the communicator's position, or irrelevant to the issue. He then decided which coding category to place the comment in -- e.g., comment about the source, a specific point, and so on. We'll touch on the categories a bit more in a moment. Finally, the coder assigned the comment an intensity score ranging from -3 (intensely counter), through 0 (neutral), to +3 (intensely supportive). For example, "He's a damned liar!" would probably receive a -3 while "I think he may be mistaken." might get a -1.

The final content category definitions were derived from our pilot test data and from 50 randomly selected protocols from the experiment itself (none of which gave any indication of the experimental condition under which they had been obtained). After a number of weeks of hard work and "discussions" conducted at rather high decibel levels, we finally settled on six content categories which seemed to cover all of the data, to have a good deal of face validity, and to produce acceptable inter-coder reliability. Table 1 presents six categories, their definitions, and coding instructions.

Insert Table 1 about here

Briefly, the categories are as follows:

1. Conclusion: specific agreement or disagreement with the conclusion of the message.

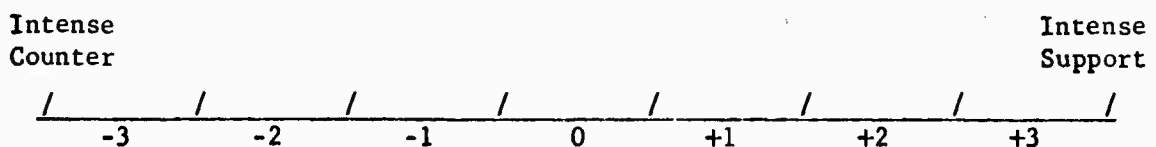
Table 1

Content Categories, Definitions, and Coding Instructions

1. Conclusion: A narrowly defined and thus infrequently used category. Defined as any comment offered by the subject specifically in agreement or disagreement with the conclusion arrived at by the communicator that persuasion (or editorials, commentaries, interpretive columns and programs) be abolished, removed, or otherwise absented from the mass media.
2. Point: A category broadly defined as any comment offered by the subject in agreement or disagreement with any specific point or set of points made by the communicator; comments either favorable or unfavorable to the "logic," "reasoning," or "argument;" simply comments like "agree," "true," "disagree," without any reference to content.
3. Source/Communication: Any comment offered by the subject about the communicator's personality, voice, pace, biases (if content of bias is not made specific and bias is not the main thrust of the comment). Any comment about the "tape," the "message," etc. of a general, nonspecific, praising or criticizing nature; comments on methodology of experiment.
4. Subject Generated Argument: Any comment about content of the communication (specifically not comments about the communicator or general praise or criticism of the communication) that related or refers to specific content not in the persuasive communication. Comments which agree or disagree with a point or a position which the tape did not tactually make or take, but which the comment implies was taken in the tape. "Reasons why," not found in the communication, that subject agrees or disagrees with a point or the conclusion. Illustrations or examples of a point or the conclusion.
5. Issue: Any comment about the interest value to the subject of the issue, topic, etc. Comments about boredom if not related by subject to communicator or to media (magnetic tape or audio presentation), or to the methodology of experiment.
6. Irrelevant: Any comment that could not be related by coders to the content of the tape, reaction to the communicator, to tape or methodology, or some aspect of the persuasive situation. Example: "A friend of mine had a baby this morning and I kept thinking about her."

Coding Instructions

1. Read each "statement" or "comment" and judge it as either supportive of the communicator's advocated position, counter to the communicator's position, or irrelevant to the position.
2. If irrelevant, code 0 in that column; if supportive or counter, determine which of categories 1 through 5 is most appropriate.
3. Rate the comment on the following scale:



4. Enter the rating value in the appropriate column of the coding sheet.

2. Source/Communication: comments aimed at the communicator's personality, biases, etc., or at the "quality" of the communication (combined categories because neither alone accounted for many comments).
3. Point: agreement or disagreement with a specific point or set of points made in the message.
4. Subject Generated Arguments: comments about the subject of the communication but related to content not specifically in the message; "reasons why" not found in the message but implied by the message (this proved to be the most important category).
5. Issue: comments about the interest value of the issue.
6. Irrelevant: comments not related to the topic (e.g., "A friend of mine had a baby this morning and I kept thinking about her.").

Once the coding procedure was finalized, each of three coders, who were blind as to Ss' experimental condition, independently coded all 163 protocols obtained after message reception and all 80 sets of notes obtained during message reception. Here we should point out a disadvantage of this type of research: it took three full-time assistants over two months to develop the coding scheme and to code all of the protocols. By this procedure we were able to derive counterarguing scores based on intensity of comments and on number of comments, either for all comments or within any content coding category.

Given the complexity of the coding procedure, checks of inter-coder reliability were quite high. Reliability of intensity codings was obtained by computing Pearson R's for each pair of coders. The coefficients ranged from .86 to .90. Reliability of content category codings was obtained by computing Kendal W coefficients

of concordance. The coefficients ranged from .45 to .91. All reliability coefficients are shown in Table 2. The few low Kendal W coefficients resulted from the very low number of comments coded into those categories.

Insert Table 2 about here

In the few minutes remaining we have time just to touch upon a few of our major findings and to comment briefly on where we think our procedure may take us. (We are in the process of completing a much more detailed report on this work).

First, an analysis of variance of the post-message attitude scores produced only one significant term, an interaction effect depending on whether the subject did or did not respond to the pre-test and on whether he heard the tape continuously or with stops. More specifically, those subjects who were committed to a position via the pre-test and who were given time to collect their thoughts via pauses in the tape were significantly less likely to change their attitudes than subjects in any other condition ( $F=5.87$ ;  $df=1,155$ ;  $p < .05$ ). A similar 2-way analysis of variance on change scores, using only subjects who responded to the pre-test, produced the same pattern of results, in this case a strong main effect of high resistance for those subjects in the "stop" condition ( $F=8.23$ ;  $df=1,77$ ;  $p < .01$ ). Both post scores and change scores are shown in Table 3. Turning to the counterarguments obtained from all subjects following message reception, the first thing to note is that there was no difference in the total number of comments (supportive and counter)

**Table 2**  
**Reliability of Content Coding\***

Pearson correlation coefficient for intensity codings

	<u>Coder #1</u>	<u>Coder #2</u>	<u>Coder #3</u>
Coder #1	1.00	.90	.87
Coder #2		1.00	.86
Coder #3			1.00

Kendal coefficient of concordance (W) for category codings

<u>Category</u>	<u>Coefficient of concordance</u>
Conclusion	.59
Point	.84
Source/communication	.85
Subject generated	.83
Issue	.66
Irrelevant	.45
Overall	.91

\* All comments generated after reception coded by three coders. Coefficients for comments generated during reception were very similar.

produced, regardless of condition. There was a slight but not significant tendency for people who heard the continuous tape recording to give more positive comments, and there was a significantly larger number of negative comments produced by subjects who heard the tape with stops ( $F=3.91$ ;  $df=1,155$ ;  $p < .05$ ) and by subjects who made "mental" as opposed to written notes ( $F=6.50$ ;  $df=1,155$ ;  $p < .05$ ). Analysis of variance of intensity scores supported this last finding. That is, when intensity scores (supportive and counter) were algebraically summed, Subjects in the "stop" condition and Subjects in the "think" condition were significantly more negative in their comments than their "continuous" condition and "write" condition counterparts ( $F=7.13$ ;  $df=1,155$ ;  $p < .01$  and  $F=4.27$ ;  $df=1,155$ ;  $p < .05$ , respectively). No interaction terms were significant. (See Table 3 for counterarguing means.)

Insert Table 3 about here

Of course, we must look at the effect for the think vs. write comparison cautiously since Subjects in the write condition were listing their "thoughts and comments" a second time. Such repetition could easily have changed the nature of their notes (e.g., because of avoidance of repetition, tiring, etc.). The appropriate strategy at this point was to conduct similar analyses on the notes taken by that half of the subjects who wrote comments during reception.

The pattern is similar to that just reported. Using only subjects in the "write" condition, a two-way analysis of variance (Continuous vs. Stop by Pre-Post vs. Post-only) was computed for attitude scores and for the various counterarguing scores. Attitude



Table 3

Mean Scores for Attitude and Counterarguing Dependent Variables for  
All Subjects and Comments Generated After Message Reception

		<u>Pre-post group</u>		<u>Post-only group</u>	
		<u>Continuous</u>	<u>Stop</u>	<u>Continuous</u>	<u>Stop</u>
Attitude post score		6.82	4.42	6.55	7.05
Attitude change score		2.82	.95		
Think	Number total comments	7.11	6.75	6.82	7.86
	Number supportive comments	3.67	1.88	2.65	2.83
	Number counter comments	3.44	4.88	4.17	5.03
	Intensity scores	-.20	-6.09	-2.41	-4.43
Attitude post score		7.20	4.32	6.35	6.80
Attitude change score		2.80	.53		
Write	Number total comments	6.93	6.00	6.43	6.85
	Number supportive comments	3.80	2.93	3.37	2.83
	Number counter comments	3.13	3.07	3.07	4.02
	Intensity scores	.83	-1.21	.72	-2.77

scores manifested an interaction effect which approached significance ( $F=3.46$ ;  $df=1,75$ ;  $p < .10$ ), with pre-tested subjects in the "stop" condition showing more resistance. Turning to counterarguing data, Subjects in the "stop" condition produced more comments than Subjects in the "continuous" condition ( $F=4.94$ ;  $df=1,75$ ;  $p < .05$ ). This difference is solely due to the greater number of counter comments produced by subjects in the "stop" condition ( $F=13.93$ ;  $df=1,75$ ;  $p < .001$ ). In other words, subjects in all conditions produced about the same number of supportive comments but hearing the tape with pauses gave rise to an increase in the number of counterarguments. Means are presented in Table 4.

No significant terms appeared in the analysis of intensity scores. However, the mean intensity scores are interesting for two reasons. First, the scores were all positive. That is, summing algebraically, the sum of all comments was supportive rather than counter. Second, even though the differences were not significant (due to unusually high variance in two cells), Subjects in the "stop" condition produced lower positive mean scores than did Subjects in the "continuous" condition. In other words, even though the "stop" condition led to positive intensity scores, the means were not as positive as those in the "continuous" condition (see Table 4).

Indeed, results from the various content categories must be considered in the context of a predominance of supportive rather than counter statements. Of all comments listed during message reception, 66% were supportive and 34% counter. If we compute these

Table 4  
Mean Scores for Attitude and Counterarguing  
Dependent Variables for Comments Generated During Message Reception  
("Write" Conditions Only)

	<u>Pre-post group</u>		<u>Post-only group</u>	
	<u>Continuous</u>	<u>Stop</u>	<u>Continuous</u>	<u>Stop</u>
Attitude post score	7.20	4.32	6.35	6.80
Number total comments	6.70	9.05	6.97	10.17
Number supportive comments	4.77	5.42	5.45	5.73
Number counter comments	1.93	3.63	1.52	4.43
Intensity scores	2.45	1.04	1.48	.27

Table 5  
Mean Scores for Counterarguing Categories on Comments  
Produced During Message Reception

	<u>Pre-post group</u>		<u>Post-only group</u>	
	<u>Continuous</u>	<u>Stop</u>	<u>Continuous</u>	<u>Stop</u>
Number supportive "point" comments	3.83	4.58	5.67	4.87
Number counter "point" comments	.62	.49	.50	1.48
Intensity "point" comments	3.48	4.35	2.62	4.08
Number supportive "subject generated"	.28	.40	.15	.68
Number counter "subject generated"	.75	2.07	.65	2.28
Intensity "subject generated"	-.98	-2.96	-.83	-2.75

percentages separately for the "continuous" and "stop" conditions, the picture changes somewhat but still favors supportive comments. "Continuous" condition Subjects gave 76% supportive comments and 24% counter while "stop" condition Subjects gave 59% supportive and 41% counter.

With this overall predominance of supportive comments in mind, let us turn to the results for various content categories. Relevant means are presented in Table 5. Since very few statements were coded as belonging to the issue or the conclusion categories (5% of total ), analysis of them was meaningless. Analysis of variance of the number of arguments in the "point" category (which accounted for 65% of all comments) revealed no differences in the number of supportive comments made, but a significant interaction due to Subjects in the "stop" condition who were not committed (pre-tested) producing more counter, point comments ( $F=5.57$ ;  $df=1,75$ ;  $p < .05$ ). We hasten to point out, however, that within the "point" category there were very few negative comments. Indeed, an analysis of intensity scores revealed no significant differences and produced high, positively valenced means in all cells.

We'll skip over the "source/communication" category pausing only to note that there were no differences in the number of negative comments and that while pre-tested subjects produced more positive "source/communication" comments ( $F=5.52$ ;  $df=1,75$ ;  $p < .05$ ), the number of comments falling into this category was too low to make any findings very reliable.

It is the category we have termed "subject-generated arguments" which we find most interesting (see Table 5). First, this category accounted for 21% of all comments listed, a proportion which might not seem too large. However, in the analysis of intensity scores it was the only category which revealed negatively valenced means in all conditions. In other words, when comments coded as supportive (+) and those coded as counter (-) are algebraically summed, the intensity of counter comments outweighs that of supportive comments only in the "subject-generated" category. Moreover, results of the analysis of intensity scores shows that Subjects in the "stop" condition were significantly more intensely negative than their counterparts in the "continuous" condition ( $F=5.78$ ;  $df=1,75$ ;  $p < .05$ ).

Turning to the number of subject-generated arguments produced, we find that Subjects who were given pauses in which to collect their thoughts produced more of this type of comment regardless of whether we look at supportive comments ( $F=4.11$ ;  $df=1,75$ ;  $p < .05$ ) or at counter comments ( $F=12.47$ ;  $df=1,75$ ;  $p < .001$ ). (We should interject that an analysis of the number of "subject-generated" arguments obtained after message reception, using all subjects, revealed no differences for counter comments but a significant interaction for supportive comments due to the fact that Subjects who had been pre-tested and who heard the tape with pauses produced fewer supportive comments ( $F=3.86$ ;  $df=1,155$ ;  $p < .05$ ). The pattern is identical to that obtained in the analysis of attitude scores using all Subjects.

Finally, it is worth noting that while "subject-generated" comments accounted for 21% of all comments produced during message reception; for subjects who heard the tape without pause, they accounted for only 13% of the comments, while for those who were given an opportunity to collect their thoughts they accounted for 28% of the comments.

There are a good many more analyses that could be reported, but we have already overstayed our time. Let us, then, just make one or two comments on the results and the procedure.

First, it appears that increasing opportunity to generate comments during reception of a persuasive message tends to increase the number of counter comments produced, but not the number of supportive comments. Moreover, the increase in counter-comments is accounted for almost entirely by an increase in what we have called "subject-generated" comments. That is, given opportunity, subjects tend to generate their own counters to the message -- comments about the subject of the communication but related to content not specifically in the message. Here we should point out that the "subject-generated" category is derived from work which Greenwald and his colleagues have been conducting at Ohio State (cf. Greenwald, 1968). Greenwald takes a learning theory approach arguing that learning mediates attitude change but that what is learned is not primarily what is in the message but those self-generated cognitive reactions evoked by the message. To the extent that these reactions are counter to the position advocated by the message, the result should be resistance to persuasion. Although Greenwald terms his

approach a "cognitive" learning theory and approaches the problem from a somewhat different perspective than we have taken, his model and his argument are very similar to that which we have posed in this paper. His "cognitive reactions" may be seen as comprising the configuration of contiguous responses which we think mediates yielding or resistance.

To continue, our data also indicate that simply an increase in the number or intensity of counterarguments produced is not sufficient to guarantee resistance to persuasion. Rather, at least with a not very ego-involving issue such as we used, resistance is a function of the interaction between counterarguments produced and prior commitment to a position on the issue. That is, if a person is committed to a position on an uninvolved issue and if he is given time to generate comments about a persuasive message counter to his position on that issue, then he will produce relatively more counter-arguments. This increase in counterarguments will tend to be due to an increase in "subject-generated" counterarguments, and he will resist the counterattitudinal message.

Now, how does all of this fit our model? On the one hand, our data support the contention that the arguments a receiver covertly or overtly rehearses (both supportive and counter) do influence yielding and resistance. However, it also appears that simply production of more or of more intense counterarguments is not the entire story. That is, simultaneous reception, comprehension, and persuasion, followed by covert counterarguing need not engender resistance. In our study, Subjects who were given an opportunity

to counterargue did produce more counterarguments, but unless they were committed to their position, they did not resist persuasion. In other words, counterarguing subsequent to persuasion is not enough.

Of course our results have to be replicated in other contexts, but from these data it appears that we may have to modify our conception of how motivation to defend a position mediates resistance. For example, McGuire's (1964) approach to the induction of resistance to persuasion posits that motivation to defend engenders acquisition of counters which, in turn, lead to resistance. To the extent that our commitment manipulation acted as a motivator, however, it appears that motivation to defend need not lead to more counterargument production (viz. "Pre-post/Continuous" group), that counterargument production is not solely a function of motivation (viz. "Post-only/Stop" group), and that neither motivation alone or counterargument production alone accounts for resistance. It appears to take both.

One possible explanation for our findings may be that by "committing" some Subjects via the pre-test, we in fact created a condition wherein the persuasive message was immediately perceived to be less persuasive and/or the counters which were produced were perceived to be more effective. That is, counters produced by committed Subjects may have been perceived by those Subjects as having relatively more impact or as having a relatively less forceful attack to overcome. This explanation, of course, is not tested.



Finally, we should comment on the procedure of having subjects list their thoughts both during and after message reception as a data base for analysis. Needless to say, we're intrigued with the technique. There are numerous internal analyses that remain to be completed, but we begin to suspect that such things as different personality styles, different kinds of issues, different reception conditions, and so forth mediate differences not only in the amount of counterarguing that occurs, but also in its nature. We wonder whether different kinds of counters function differently for different people under different conditions. For example, would a context in which source was made salient lead to a higher proportion of comments directed at the source and would the nature of these comments vary depending on his credibility? Many questions like this can be asked. Hopefully, this technique will begin to provide us with a way of answering some of them.

We have at least we hope, made a substantial beginning in the investigation of the cognitive processes in persuasion more directly than the traditional one of examining communication inputs and attitudinal outcomes.

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